A Lecture

ON

THE FUNCTIONS OF THE LIVER IN RELATION TO THE METABOLISM OF FATS.

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GENTLEMEN,—The liver is an organ with multifarious duties to perform. Of many of these it is possible to speak with some degree of scientific assurance. Something of its work in connexion with carbohydrate storage has been known for 60 years. It has something to do with the removal of nitrogen from superfluous protein foods and with the manufacture of urea from this nitrogen. It takes its part in the transformation of purin bases, turning them out as uric acid or destroying them more completely still. It deals with the blood pigment that is past work and uses it to prepare colouring matter for the bile, the urine, and the fæces, and there are many other miscellanies in the chemistry of the body which have been put down to its activity.

But the fact that the fat absorbed from the food is specially diverted, unlike the other foodstuffs, from the stream of portal blood and conveyed by its own channels into the systemic circulation might be taken as an indication that the fats, at any rate, may be left for other organs and tissues to deal with. Fats are stored in the body in larger quantities than any other kind of food. But the storage places for fats are well known and the liver in mammals is not included among them.

Yet the examination of the amount of fat in the livers of men and other animals reveals very great variations, not only in the case of livers from the post-mortem rooms attached to hospitals for the sick, but in those removed from animals at the slaughter-house. A hard-and-fast distinction between these two classes of material it may not be possible to maintain, but anyone who has determined the amount of fat in the liver in a long series of animals that are presumably normal will have been struck by figures occasionally obtained that are very different from those that may be taken as normal average figures for this organ, different even from those that would be abnormally high for other organs. Taking one series of about 40 animals, the livers of which I examined in this way, the great majority were found to yield between 2 and 4 per cent. of the higher fatty acids reckoned on the fresh weight of the tissue as the total amount present in all the different combinations of fatty acids the liver contains, but five out of the series, or 1 in 8, gave on analysis double or more than double this amount: a dog 7·8 per cent., a pig 8·3 per cent., and three sheep 7·3, 12·3, and 14·1 per cent. respectively. This last figure means that very nearly, if not quite, half the solid matter of the tissue was fat in some form or other. The same fact comes out in spite of the absence of extreme figures in some analyses carried out by Hartley at the Lister Institute. A series of nine analyses of the livers of guinea-pigs which had been fed on oats, cabbage, and hay showed the percentage of higher fatty acids reckoned on dry weight to range from 6·1 to 14·9. Another series of five analyses on guinea-pigs fed exclusively from the age of two weeks on bread, water, and cabbage gave variations from 6·7 to 12·6 per cent. A series of 12 rats that I examined gave a range of variation from 1·7 to 6·5 per cent. of the fresh tissue. In another series of rats examined in the same laboratory by the same methods there were 14 the livers of which contained less than 4·2 per cent. of higher fatty acids, the mean percentage being 3·1; while four others with more than 4·2 per cent. gave as the mean 7·2 per cent. I shall be referring later to some figures which I obtained from cats; five of these animals, to all appearance normal, gave the figures 2·2, 3·5, 3·9, 19·2, and 22·2 per cent. From the post-mortem room material may not infrequently be obtained in which still larger amounts than these are to be found; 60 or 70 per cent. of the dry tissue, and 23 per cent. or more of the fresh, may be isolated as higher fatty acids after treatment with potash and alcohol and subsequent acidification.

A good deal of experimental work directed to the production of abnormal amount of fat in the liver and other organs has been published by G. Rosenfeld, whose results are well known.[1] The method of estimating fat employed by him is one that is open to a number of criticisms. On the one hand, it must be admitted that it yields a larger weight of substance soluble in ether than other methods. But, on the other hand, it is impossible to compare the results obtained by this method even with one another, since there are many combinations of fatty acids which are soluble in ether: the free acids themselves, the neutral glycerides, the choline phosphoric acid combinations of the type of lecithine, jecorine, cuorine, and others as well. An ethereal solution may in one case be composed almost entirely of neutral glycerides; in another case more than half of it may be some phosphatide lipoid substance. Since the common component of all these compounds which is of greatest significance is the fatty acid radical, the most satisfactory method of estimating fats for most comparative purposes is to set the fatty acids free from all the combinations in which they occur, separate them from the other constituents, and weigh them. If the combinations from which they are obtained are simple neutral fats the yield will be about 95 or 96 per cent. of the fat. If they are lecithin it should be 70 per cent., whereas other phosphatides yield less than 50 per cent. The fat contained in the ethereal solutions of extracts of the heart or liver obtained by Rosenfeld's method do not commonly yield more than 60 per cent. of fatty acids, sometimes less, and this yield varies according to the composition of the extract. Nevertheless, the range of variations in the amount of the fat in the liver that Rosenfeld was able to produce experimentally was so much greater than in the case of other organs that such uncertainty as his method leaves is relatively insignificant. There is no organ that is ever flooded with fat in the way that the liver is.

Now the appearance of large amounts of a substance in an organ may be due to active production of that substance in that organ or else to importation from other parts. We know from the famous experiments of Rothamsted, carried out by Lawes and Gilbert 60 years ago, that fats are synthesised by animals and that the material used for this synthesis is in the main at least the carbohydrates contained in our food. Magnus Levy has described a reaction occurring in the liver which he regards as typical of the unknown reactions by which this synthesis is effected.[2] He found among the acids formed in the liver when portions of this organ were kept aseptically in a thermostat for some days, not only acetic and lactic acid, but also butyric acid, and at the same time gas was given off which proved to consist in part of hydrogen. The source of the butyric acid could not be determined positively, but there were some indications that it was derived from sugar and the simultaneous occurrence of hydrogen suggested an analogy with the butyric fermentation of sugar. And Magnus Levy adopts as the explanation of the appearance of this butyric acid a hypothesis originally put forward by Nencki, which may be extended to account for the formation of higher fatty acids from carbohydrate. This is, that in the first instance lactic acid is formed from the sugar; that lactic acid, as is well known to be the case with all α-hydroxy acids,[3] readily splits into formic acid and the aldehyde with one less carbon atom than the hydroxy acid, in the case of lactic acid acetic aldehyde; that the aldehyde then condenses to form aldol, which is the β-oxybutyric aldehyde, from which it is easily conceivable that butyric acid may be formed. The condensation of aldehydes on this plan is not confined to acetic aldehyde, and either by the condensation of two molecules of aldol or four of acetic aldehyde it is equally conceivable that the same type of change as leads to the formation of butyric acid may lead to the formation of caprylic acid with eight carbon atoms, and so forth. The only limitation such a hypothesis imposes is that the acids produced must all contain some multiple of two carbon atoms, which is just what is well known to be the case with

[1] Archiv für Experimentelle Pathologie und Pharmakologie, vol. lv., pp. 180 and 350.

[2] Hofmeister's Beiträge, vol. ii., p. 261.

[3] Journal of the Chemical Society, 1904, p. 1708

the fatty acids found in nature. If, therefore, butyric acid is formed from glucose in the liver by such reactions as these the synthesis of palmitic and oleic and stearic acids from glucose may also be the work of the liver and be effected by similar reactions. In butyric fermentation of sugar, besides butyric acid sufficient of the six-carbon caproic acids is produced to be commercially worth separating, and as Raper showed at the Lister Institute detectable and identifiable amounts also of the normal eight-carbon caprylic acid.[4] The reactions, therefore, which serve the bacteria for producing butyric acid from sugar serve them also for the synthesis of caproic acid and caprylic acid. Raper also succeeded in synthesising normal caprylic acid from acetic aldehyde by condensation of aldol with itself, oxidising the aldehyde so formed by means of silver oxide and reducing the hydroxyl groups in the chain with hydriodic acid,[5] an achievement which previous chemical experience as to the condensation of aldehydes resulting in the formation of branched and not of normal chains rendered improbable. The presence of hydroxyl groups in the chain seems to account for this. Magnus Levy's observations, therefore, may be taken as pointing to the liver as a likely organ to which to assign the transformation of sugar into fat, since it has to be assigned to some organ in the body.

In a long series of experiments on the amount of higher fatty acids present in the liver I found that in a fair proportion of cases, nearly 50 per cent., this amount could be observed to increase when a pulp of the liver tissue was kept in a thermostat at the body temperature.[6] The weighed increase of fatty acids soluble in petroleum and not soluble in water from a sample of liver pulp weighing about 50 grammes was sometimes as much as 3, 4, or even 5 decigrammes and amounted to a 15 to 30 per cent. increase on the fatty acids present in the pulp before the experiment started, as determined by reference to the mean between two control estimations, which differed from that mean by about 1 per cent. of the total amount of the fatty acids present. In three out of five attempts to remove and reduce the liver to pulp aseptically this was successful, and in two of these three there was a marked increase in fatty acids on incubation, so that the formation of fatty acids was not the work of bacteria. As to the nature of the material which was converted into fatty acids under the conditions of the experiments, it was impossible to get clear evidence: the addition of substances which might be supposed to be used, or to occur in the course of the reactions involved, in no case gave constant and uniform results. The many negative experiments seemed to make it desirable to postpone further investigation till more light from other sources could be thrown upon the subject.

There are, therefore, grounds for looking to the liver as the seat of the synthesis of fatty acids, and it is possible that the reason why there are greater variations in the amount of fat in the liver than in other organs is in some measure to be sought for in this direction. It should be remembered, too, that the fatty acids found in the liver are to a much greater extent than is the case in the connective tissue fat, unsaturated acids; and since the only hypothesis as to how fatty acids are synthesised for which there is anything to be said implies a possibility or even the probability that the acids formed would be unsaturated, this may be regarded as some further justification for the idea.

There are, however, still better grounds for thinking that large amounts of fat found in the liver are often due to the importation of fat from the storage places in the connective tissues. For in the first place, perhaps the most remarkable feature of the extreme cases of fatty liver described by Rosenfeld in dogs which were starved for five days and then given phlorrhizine on the sixth and seventh days, is the extraordinary rapidity with which enormous quantities of fat appear in the liver, forming as much as 70 per cent. of the dry weight of the organ.[7] He says that the fat does not begin to accumulate until the fortieth hour after the first dose of phlorrhizine, and the animal is killed eight hours later. According to this account, therefore, this enormous increase in the amount of fat in the liver takes place in the course of some eight hours. Again, if the animal is allowed to live another 24 hours, without any further dose of phlorrhizine the liver is then found to contain only normal amounts of fat, so that recovery is nearly as remarkably rapid as the development of this abnormal distribution of the fat in the body is. It would be easier to understand such rapid changes as these if it is not necessary to suppose the fat to have been made where it is found.

There are probably parallels to be found to the rapid changes indicated by Rosenfeld's results in clinical experience. Cases are recorded of the most intense fatty changes in the liver being found post mortem when there is every reason to suppose that the abnormal condition has come on with the greatest rapidity. Cases of deferred chloroform poisoning particularly suggest themselves. Thus Langmead[8] describes the case of a boy, aged 12 years, who after operation under chloroform for lymphadenomatous glands in the neck became delirious and later drowsy and unconscious, and died, jaundiced and wasted, 72 hours after the operation with a very fatty liver; and another case of an apparently healthy child, aged three and a half years, dying 36 hours after a similar operation with similar sequelæ, and showing intense fatty change in the liver. He also describes a case where similar clinical symptoms followed a trifling operation under gas in an out-patient, a girl, aged 15 years, accompanied as in the other cases by alarmingly rapid wasting. This case ended, however, in recovery, and ten days after the onset the body was restored to its normal condition of nutrition. Cases of cyclical vomiting ending fatally in three or four days are described with similar post-mortem appearances in the liver.

A case of a peculiar character has recently come to my notice through the kindness of Dr. A. E. Boycott, who sent me a portion of the liver for examination. A man, aged 49 years, apparently healthy, drank when intoxicated a considerable amount of strong hydrochloric acid and died six hours later. His stomach was practically destroyed. An adjacent portion of the liver was also burnt and this part under the microscope showed no more fat than is often to be seen in a normal liver. The rest was intensely fatty and contained on analysis more than 20 per cent. of higher fatty acids reckoned on the fresh weight. The acids had the iodine value 65·6. Dr. Boycott's comment that "the presumption is pretty well justified that most of this fat had appeared in the liver in these six hours" is one with which I am strongly disposed to agree. Those who have a wider clinical and post-mortem room experience than I, may be able to furnish further evidence for the belief that I hold that the most marked accumulations of fat in the liver are not necessarily by any means always slowly brought about by chronic disorders as in phthisis or chronic alcoholism. In many cases they may have arisen as rapidly, and in others perhaps are recovered from as rapidly as seems to be the case in phlorrhizine poisoning in dogs.

It is unfortunate that the pathological examination of post-mortem room material is so largely confined to the histological and microscopic appearances. The estimation of the amount of fat in a tissue by histological reactions is a well-known source of fallacy. Hoppe Seyler showed that there is less fat in a sciatic nerve that has degenerated as a result of section than there is in the healthy nerve on the other side of the same animal.[9] Rosenfeld proved the same to hold for a degenerated occipital lobe in man by comparison with the healthy lobe on the other side of the same brain. It is also familiar that whereas normal heart muscle gives no histological reaction for fat, it nevertheless contains something like 10 per cent., reckoned on dry weight, of higher fatty acids in different kinds of combinations, of which the microscope gives no indication. The hearts of animals, on the other hand, that give histologically the most intense scharlach reactions for fat, on analysis may be found to contain relatively only a little more fat than normal hearts.[10] The chemical estimation of fat in tissues, when all appliances are at hand, hardly takes more time than the preparation of histological specimens, and it is urgently desirable that post-mortem room material should be systematically worked at on chemical lines as well as histological.

The classical controversy as to the source of the fat in fatty organs is, as a matter of fact, commonly regarded as closed. Lebedeff 25 years ago made the two most important

[4] Journal of Physiology, vol. xxxv., p. 24.
[5] Journal of the Chemical Society, 1907, p. 1831.
[6] Schmiedeberg's Festschrift, 1908.
[7] Ergebnisse der Physiologie, 1902.
[8] Brit. Med. Jour., Sept. 28th, 1907.
[9] Virchow's Archiv, vol. viii., p. 127, and vol. xx., p. 426.
[10] Problems in Animal Metabolism, p. 93 (J. Murray, 1906).

observations bearing on this point, and they have been confirmed by Rosenfeld using other methods. Lebedeff, in the first place, noted that the liver in a case of phosphorus poisoning supervening on extreme emaciation showed no fatty change. He suggested that the absence of the usual amount of fat found in the liver in phosphorus poisoning was due to the lack of fat in the rest of the body.[11] Rosenfeld has since administered phosphorus to dogs in different states of nutrition. He found in the liver of a well-nourished dog 37 per cent. of fat reckoned on dry weight; in a dog less well stocked with fat 17·4 per cent.; and in a dog reduced by starvation to extreme emaciation only 6·1 per cent., a low figure, that is to say, even for the liver of a normal animal.[12] Lebedeff's other observation was that if he substituted for the fat usually present in a dog's adipose tissue fat of another kind, linseed oil, the acids constituting which are liquid, and give lead soaps that dissolve in ether, then the administration of phosphorus causes the appearance of large amounts of fat in the liver similar in composition to the linseed oil contained in its adipose tissue, a fat, that is, yielding 67 per cent. of acids the lead soaps of which dissolve in ether, whereas a dog not previously prepared when given phosphorus had in the fat in its liver only 23 per cent. of such acids giving soluble lead soaps. By means of the iodine value Rosenfeld has, as is well known, been able to show that the fat found in such large quantities in the liver in phlorrhizine poisoning varies in its character with the character of the fat stocked in the animal's adipose tissue.

The most marked changes, therefore, in the amount of fat in the liver are due apparently to the migration of fat from the adipose tissues in which it is stored. For if it were produced in the affected organ there is no reason why the character of fat produced should be determined by the nature of fat in other parts of the body. And, as we have seen, the liver is the organ in which the most marked accumulations of fat are found. The liver is theretore the organ to which the migration of fat from other parts of the body is most conspicuous. In other organs the amount of fat may be increased 30 or 50, possibly 100 per cent. above normal mean figures. In the liver the increase may be 300 or 400 per cent. above the normal mean, and even among normal animals something like 1 in 10, or even 5, give figures that are 50 to 100 per cent. or even more above those which prevail among all the rest. In fact there is in the extent and range of the variations in the amount of fat in the liver, as compared with other organs, something comparable to the range of variations in the amount of glycogen in this organ compared with others. But the interpretation of the appearance in the liver of the largest amount of fat ever found there so far seems to be different, in that the fat is in the cases that have been most studied imported from other parts of the body and not made on the spot.

Now there are important differences between the fat usually found in the liver or heart and that of adipose tissue. Substances soluble in ether extracted from the heart or liver by Rosenfeld's method are not entirely composed of fat in the ordinary sense of neutral glycerides of higher fatty acids: the yield of these acids on saponification is 30 to 40 per cent. too low. It is too low even for lecithin which is known to be present in these organs, and since some neutral glyceride is there too, there must be also some substances present, and not in negligible amounts, besides the simple glycerides and lecithin, either substances which contain less higher fatty acids than lecithin, such as jecorin or cuorine, or else others which contain none at all, such as cholesterin.

After having used, therefore, the Rosenfeld method of fat estimation for a time I made it a practice to check it by saponifying the extracts obtained and then determining the fatty acids. It is the fatty acids after all that are the essential factors in the metabolism of fat, and therefore for general biological purposes some method by which all the fatty acids, present in a tissue in whatever kind of combination, are set free and obtained in a weighable form is the most suitable and reliable. For some years now we have used some modification of the Liebermann method consisting essentially in dissolving the tissue in strong potash and saponifying in the presence of alcohol all compounds of fatty acids, precipitating the acids with sulphuric acid, and extracting with petroleum boiling under 70° C. This method gives excellent results for most purposes. But it soon became obvious that the fatty acids obtained from the liver or heart were different from those in the fat of adipose tissue. When kept for a few days at the ordinary temperature, not protected from the air, or when heated for an hour or two, they increase in weight and are found to have become incompletely soluble in petroleum. Since the oxy-acids formed by oxidation of unsaturated acids are insoluble in petroleum this suggested an explanation of the behaviour of the acids. And the fact that Rosenfeld's determinations of the power of absorbing iodine possessed by the extracts obtained from the liver and heart gave figures higher than those carried out on connective tissue fat, in spite of the fact that they contained only about 60 per cent. of fatty acid, though it might be explained in other ways, might probably mean that the acids in the fatty substances he obtained were more unsaturated than those found in the adipose tissue. If the absorption of iodine by the extract was entirely due to unsaturated fatty acids, then in an extract absorbing 70 per cent. of iodine and containing only 60 per cent. of fatty acids, the fatty acids themselves must absorb about 116 per cent. of their weight of iodine. When Hartley therefore undertook a systematic investigation of the nature of the fatty acids in the liver and other organs this was the first point he attacked. By the use of methods calculated to expose the acids as little as possible to the risk of oxidation he found that the mixed fatty acids of the liver, heart, or kidneys from every species of animal examined absorbed far more iodine than the acids from the adipose tissue fat of the same animals treated in exactly the same way. The iodine value of the fatty acids in these organs averages normally about 120, and ranges from about 110 to 140, whereas that of the acids from adipose tissue varies according to the species from 40 in the goat to 65 in man.[13]

But the one organ, and this is the point that is of most importance in our argument, the one organ in which the iodine value of the fatty acids was found to present fairly commonly wide departures from this order of magnitude is the liver. In the following series of human livers examined by Hartley and Mavrogordato the more the amount of fat exceeds the normal average amount the lower the iodine value of the acids becomes, till in the cases of extreme fatty change the iodine value is no higher than that of the acids in subcutaneous fat. The list given is from their paper.[14]

TABLE I.

	Cause of death.	Higher fatty acids per cent. of dry weight.	Iodine value of fatty acids.
Normal figures.	1. Pernicious anæmia	12·1	116·8
	2. Lobar pneumonia	13·7	116·8
	3. Pernicious anæmia	14·25	116·0
	4. Diabetes	14·4	119·6
Commencing fatty change.	5. Toxæmic jaundice	15·6	109·5
	6. Accident	17·2	103·5
	7. Empyema	21·5	96·0
	8. Phthisis	25·4	96·4
	9. Broncho-pneumonia	38·4	84·9
	10. Appendicitis	44·0	91·1
	11. Carcinoma of bladder	47·2	77·8
	12. Broncho-pneumonia	54·6	71·8
	13. Ulcerative colitis	60·9	80·3
	14. Accident	66·3	63·0
	15. Dysentery	73·5	69·1

This is a striking series, but it could be extended by a number of analyses carried out since, many of them on animals, which fully confirm the fact which it brings out—namely, that the more fat there is in the liver the nearer this fat approaches in character to that of the fat stored in adipose tissue. It is difficult to see how this is to be explained except by supposing that when there is an excessive amount

[11] Pflüger's Archiv, vol. xxxi., p. 11.
[12] Zeitschrift für Klinische Medicin, vol. xxxvi., p. 232.
[13] Journal of Physiology, vol. xxxvi., p. 17.
[14] Ibid., vol. xii., p. 371.

of fat in the liver it is because an excessive amount of the stored fat of the body has been brought to the liver. And the inference comes ready to hand that a normal liver, too, gets fat brought to it composed largely of saturated acids but this fat it is able to deal with, converting the saturated acids into less saturated ones. We have not yet obtained sufficient figures for other organs, the heart or kidney for instance, to be able to say positively that variations of this character do not occur there too, but we certainly have not obtained, nor do we any longer expect to obtain, variations on this scale.

The liver, therefore, so far as we can see at present, seems to be the organ of all others to which the connective tissue fat can most certainly be traced. And yet when this importation is not excessive the fatty acids in the liver are like those in the other working organs of the body in having a high iodine value, and in this respect unlike those in the stored fat of the connective tissues. This suggests that the fat which is imported to the liver is normally there altered so as to acquire a higher iodine value. Such a desaturation of fatty acids must occur somewhere, since the fat stored away and not in use is composed of acids that are more saturated than the fat in any of the organs in which we can suppose fat to be oxidised. It may be, of course, that desaturation is effected in all cells which oxidise fat, but the facts with regard to the liver that we have been reviewing make it probable that it is especially in the liver that this change is brought about, and it seems possible that the liver to a great extent prepares the fat in this way for other organs in which the oxidation is subsequently carried to a finish.

In order to see if it was possible to get any evidence of this desaturation of fatty acids in the liver I proposed last summer to Dr. L. Meyer Wedell some experiments in which animals were fed on various fats and oils. Her experiments were unfortunately interrupted, but not before one curious and astonishing fact had come to light. The fatty acids in the livers of rats have the iodine value of about 130, sometimes rather more. Cod-liver oil yielding acids with the iodine value of 150 was given to rats for from 4 to 14 days, and it was found that the iodine value of the fatty acids in their livers went up; the figures obtained were 161, 198, 170, 173, and 174. Subsequently I repeated these experiments in this way: 5 grammes of ground rice, 4 grammes of plasmon, and 3 grammes of gelatin were heated together in 100 cubic centimetres of water, containing a little sodium chloride, calcium chloride, and potassium phosphate. While still warm this was well shaken with 30 cubic centimetres of cod-liver oil and a fine emulsion obtained. Then while still being shaken it was cooled down under the tap and just before setting poured out into a basin. By determining the amount of this emulsion in jelly that was eaten a rough idea of the amount of oil taken could be formed; the Tables II. and III. show the same sort of figures for the iodine value of the fatty acids in the liver, higher, that is, than any that ever have been observed under other conditions, *and even higher than those for the oil given.* The subcutaneous fat tends to be affected in the same sense, but to nothing like the same extent nor so quickly. In the case of the liver the effect is already well marked within 24 hours of the beginning of the feeding. The contrast between the rats that had cod-liver oil and those that had none is constant, and still more marked with those that had fat of a low iodine value, cocoa-butter. The other organs of a rat are too small to be satisfactorily worked in this way.

TABLE II.—*Showing Effect on the Liver Fat in Rats of Feeding with Cod Liver Oil.*

Rat.	Weight.	Duration of feeding.	Approximate amount of oil eaten.	Liver.		Skin.	Rest of body.
				Fatty acids.	Iodine value of fatty acids.	Iodine value of fatty acids.	Iodine value of fatty acids.
No.	Grms.			%			
1	150	0	0	1·7	135	84	108
2	154	<16 hours.	3 c.c. (much food in stomach).	2·3	131	100	112
3	200	*48* hours.	*20* c.c.	4·9	*215*	83	—
4	196	4 days.	7 c.c.	4·9	184	103	130
5	226	6 ,,	21 c.c.	2·8	177	94	132
6	161	7 ,,	14 c.c.	2·7	167	88	136

Iodine value of fatty acids from cod liver oil, 150.

TABLE III.—*Showing Effect on the Liver Fat, as seen within 24 Hours, of Feeding with Different Fats or Oils.*

Rat.	Weight.	Amount of jelly eaten.	Fat or oil eaten.	Liver.		Skin.	Rest of body.
				Fatty acids.	Iodine value of fatty acids.	Iodine value of fatty acids.	Iodine value of fatty acids.
No.	Grms.	Grms.		%			
1	125	50	0	2·8	139	87	122
2	168	8	<1 gramme ol. morrh. (iodine value 150).	6·5	146	72	79
3	186	25	4·5 grammes ol. morrh.	4·8	173	75	86
4	237	30	5·5 grammes ol. morrh.	4·4	173	85	86
5	187	40	8 grammes margarine (iodine value 40).	4·8	133	71	76
6	203	25	5 grammes cocoa butter (iodine value 8).	5·1	113	74	80

The rats were kept without food for 24 hours, then each was given 50 grammes of jelly prepared with or without fat, and killed 24 hours later. All these rats were very well nourished and fat before the experiment began.

In order to get figures for other organs it is necessary to take a larger animal. Cats, of course, take fish greedily, and it is well known that herring oil, the fat of the muscles, forming in the fish I examined about 8 per cent. of the fresh tissue, has a high iodine value, that which I examined 127. But the most remarkable fatty acids appear to be obtained from the ovary of this fish. The samples analysed contained about 5 per cent. of fatty acids with the iodine value falling between 180 and 190.

No. I.—A cat was given three meals consisting respectively of 108 grammes and 210 grammes of herring roe and 90 grammes of herring flesh rubbed to a paste with 10 cubic centimetres of cod-liver oil. It was killed 40 hours after the first meal.

No. II.—Another cat ate at its first meal 95 grammes of herring roe, at its second 130 grammes of herring flesh with about 12 cubic centimetres of cod-liver oil, and at its third 143 grammes of herring roe. It was killed 60 hours after the first meal.

No. III.—A cat fed on 100 grammes of cod flesh daily with no fat for four days, then given one meal of herring roe. After four hours the cat was killed, the contents of its stomach removed, and the amount of fat in this determined. The amount of fat in the food eaten was known, the difference gives the maximum amount of fat that can have been absorbed—namely, 2·3 grammes. The contents of the intestine were not collected or analysed but certainly contained a part of this 2·3 grammes not yet absorbed.

No. IV.—A cat fed on 100 grammes cod flesh daily with no fat for five days, then given one meal of herring roe and killed eight hours later. The fat in the food eaten, less the fat in the food found still in the stomach, amounted to 3·3 grammes. Probably the amount actually absorbed was considerably less than this.

No. V.—A cat fed on 100 grammes cod flesh daily with no fat for five days, then given about 24 cubic centimetres cod-liver oil with its food in the course of 40 hours and killed 16 hours after the last meal.

Four normal cats, A to D, fed on horseflesh and milk were examined for comparison, and one, E, that had 100 grammes of cod flesh daily and no other food for five days.

The figures given in the table show that the liver is the only organ of those examined in which the result under consideration is noticeable. The oil finds its way, much the larger part of it no doubt to the connective tissue depots,

TABLE IV.—*Showing Amount and Nature of Fats in the Organs of Normal Cats A to E, and Cats fed on Fish Oils I. to V.*

—	Liver.		Heart.		Spleen.		Kidneys.		Adipose tissue.
	Fatty acids.	Iodine value of fatty acids.	Fatty acids.	Iodine value of fatty acids.	Fatty acids.	Iodine value of fatty acids.	Fatty acids.	Iodine value of fatty acids.	Iodine value of fatty acids.
	%		%		%		%		
A.	2·54	137·7	2·26	125·4	1·96	103·9	4·3	73·1 73·0	69·7
B.	2·22	129·4	2·99	127·8	—	—	6·0	61·1 61·2	—
C.	3·95	136·9	3·06	119·1	—	—	4·6	72·8	73·5
D.	22·25	94·5	3·01	102·2	—	—	6·8	66·7	61·25
E. Fed on cod flesh for 5 days.	19·2	90·6	2·55	118·5	1·93	116·5		77·4	59·1
I. Herring roe 40 hrs.	2·96	181·7	3·58	116·4	2·31	140·0	3·7	100·3	94·8
II. Herring roe 60 hrs.	5·74	170·7	3·00	120·7	2·27	121·6	—	—	88·2
III. Herring roe 4 hrs.	2·58	152·5	3·08	112·0	1·95	118·0	3·97	80·5	67·5
IV. Herring roe 8 hrs.	3·50	166·9	2·33	137·9	2·62	106·0	—	—	84·6
V. 24 c.c. ol. morrh. in 40 hrs.	4·04	*185·0*	2·21	130·3	—	—	—	—	73·8

and tends to raise the iodine value of the fat already there with which it mixes. The same thing happens in the liver, both in cats and rats, and, as the experiments with cats show, not on the same scale at any rate in any other organ; not at all, for instance, in the heart, an organ in which everything tends to show that fat is used as a source of energy very largely. And in the liver the effect is much more marked than in the adipose tissue because the liver is not a place to which fat comes to stay, or in which it is stored. The character of the fat in the liver is determined not necessarily by the character of the fat which has been eaten and stored by the animals in weeks past, but by the character of the fat that has recently been circulating in the blood. This, of course, may in times of mobilisation be fat from the stores in the adipose tissue. But when there is abundant fat taken up from the intestine mobilisation of stored fat does not occur; the animal does not get thinner but fatter if plentifully fed. In this case the liver takes up the food fat and in the liver this food fat is more obvious than in the connective tissues, because in the liver it is not diluted down with fat eaten, it may be, weeks or months ago, since fat is not stored in the liver, but disappears from it to make place for other fat that it can get from the blood in its stead. The character of the fat in the liver, therefore, is determined in the first instance by the character of the fat offered it by the blood.

But in the liver there is something more than this. If this were all that happened the iodine value of the acids might approximate to that of the cod-liver oil acids but could not exceed it. In all the rats it exceeds it and also in Cat No. V., which is the only cat that is strictly comparable. This can only mean that the liver has the power of desaturating fatty acids and exerts it even when the acids supplied are already as unsaturated as those of cod-liver oil. Why even in this case the change is brought about we can at present only speculate. We know that the properties of unsaturated fatty acids of the same empirical formula vary according to the position of the unsaturated linkage. For instance, the ordinary oleic acid has the double bond in the middle between the ninth and tenth carbon atoms. Le Sueur prepared synthetically the acid with the double bond between the sixteenth and seventeenth, or, to use the ordinary nomenclature, between the α and β carbon atoms. This acid would not decolourise bromine water.[15] In certain positions, then, the double linkages are more stable than in others. It may therefore be that the liver is in the habit of removing hydrogen and introducing double bonds in certain positions in the chain and does so whether there are such unions in other positions or no. If the acids of the fish oils are unsaturated in the wrong places they might then become still more unsaturated when brought within the sphere of action of the liver. On the other hand, it may be that there are double unions in the acids of cod-liver oil which do not absorb iodine as readily as they would in other positions in the chain—are not, that is, so liable to oxidation. The action of the liver may be to move these double linkages along the chain into positions in which they not only absorb iodine more readily, but are more liable to the disruptive oxidising action of the cells that have to depend on fat for the supply of energy. The one idea involves the formation of new double bonds, the other a transposition of existing ones.

However that may be, the conclusions which are indicated by the observations described are, in the first place, that the liver has after all something to do with the fat absorbed from the intestines. Its position gives it, it is true, no special privileges in this respect. The absorbed fat being conveyed into the systemic circulation, other parts of the body have an equal chance of taking it up as it is brought to them in the arterial blood. So far as we know at present of these other parts of the body it is only the connective tissues that avail themselves of the opportunity. And they take the fat up as it comes to them and store it unchanged. The liver, on the other hand, not only takes up its quota, but gets to work on it at once, and brings about changes in the acids, for which the term "desaturation" may be convenient, though it must be remembered that sometimes possibly the change may be merely a transposition of unsaturated linkages, while in other cases the process must apparently be of the kind which the term desaturation implies.

I think it will be admitted that support is thus gained for the idea that the liver has work to do in preparing fat for the metabolic processes in which fat is concerned. There are no *a priori* grounds for thinking that this work is more than of a preparatory nature; the complete oxidation of fat liberates so much energy that the later intensely exothermic stages of the breakdown of fat are likely to be reserved for organs where the discharge of energy is conspicuous—the heart, for instance, or the muscles or kidneys. If there is an extensive discharge of energy in the liver it is curious that it is so difficult to say what form that discharged energy takes.

It looks as if the work of the liver consisted in an operation which may be compared to the drying of gunpowder. The fats we take in our food are remarkably unreactive substances, and it has always been one of the most astonishing chemical achievements of animal cells that they should be able to burn up completely and cleanly as they do so stable a structure as saturated fatty acids like palmitic or stearic acids. They are wet gunpowder. And the body stores its gunpowder wet, and safely removed from the inflammatory operations of busily working cells. When the orders for mobilisation are issued this wet powder is conveyed to the drying chambers in the liver, and from there distributed to the fighting line in a proper condition for use. There are times when the stress of this work is manifestly too great. Too active a mobilisation of stored fat, or too little activity in dealing with it on the part of the liver, will result in an accumulation of the unfinished product in that organ. A fatty liver is then the result, and the fatty acids which it contains are found to have a low iodine value. There is an accumulation of wet powder.

Some of the conditions in which such accumulations are found appear to fit in with this conception of the way in which they come about. Pflüger, in his account of an important experiment on pancreatic glycosuria, noted that the dog which had excreted more than three kilogrammes of sugar in the course of two months, during which it was given no fat or carbohydrate, was at the end emaciated to such a

[15] Journal of the Chemical Society, 1904, p. 1708.

degree that no fat could be found stored anywhere in its body. Nevertheless, its liver had not wasted and contained a normal amount of fat, 2·7 per cent. Hence he concluded that the liver keeps itself in a state of nutrition in diabetes, as the heart does in all forms of starvation, because of its activity which consists according to him largely in converting into sugar the fat brought to it from the storage places for fat. So far as the transportation of fat is concerned we must, I feel, be with Pflüger; as to the way in which fat is worked up in the liver, Pflüger's position is one that is at any rate questionable. The fatty livers that occur not uncommonly in diabetes and the condition described by Rosenfeld in dogs poisoned by phlorrhizine would be intelligible if interpreted as the result of excessive activity in the mobilisation of stored fat due to the necessity in which the body finds itself owing to the draining away of so much carbohydrate. The mobilisation of fat must, of course, occur always in starvation. Mottram has shown that when this occurs the amount of fat in the liver is increased. A preliminary note by him on this subject[16] appeared 18 months ago. His proof since then has become far more circumstantial and convincing, and though this valuable work is not yet published I have his permission to refer to it here. He experimented by feeding rabbits and guinea-pigs for a long period on a constant liberal diet so as to have a number of animals in as nearly the same condition of nutrition as possible. Some were killed to serve as normal controls and others after one, two, three, four, or five days' starvation. Evidence was obtained in this way that an importation of stored fat to the liver occurs after one day and again after four days' starvation. At these periods not only is the amount of fat in the liver increased, absolutely as well as histologically, but the iodine value of the fatty acids is lowered. In the intervals the importation ceases, the liver being at work on that which has been brought to it, the amount of fat in it diminishing and the iodine value rising.

It is not, of course, to be expected that active mobilisation of fat should necessarily and in all cases outrun the powers of the liver for working up and handing on the fat to other parts. A tendency for the liver to be in arrears of work is all the evidence we can expect from the examination of the organs of starving animals. Just as in the matter of alimentary glycosuria, we must expect to find individual differences.

On the grounds, therefore, which I have given I think it is a fair hypothesis to make the starting point for work that the liver stands in a different relation to circulating fat from the other organs of the body. Its work is to take up this fat and bring about certain changes in it, the result of which is to make this material available for the use of the organs in which its potential energy is required. I have described the grounds we have for thinking that this change consists, at any rate in part, of a desaturation of the fatty acids. Is that the whole of the change? There is another difference between what may be called organised fat—the fat, that is, in the cells of the heart, muscles, kidneys, &c.—and the unorganised merely stored fat of the adipose tissue. The latter is the unaltered fat of the individual's food; it has its iodine value determined by that of the fat which has been absorbed, but it also contains no phosphorus. The fat in the liver and the other organs of the body, the organised fat, is very largely composed of phosphatide lipoid substances. Of these we know more or less dimly of a considerable number, more or less definitely of one lecithin. Rubow estimates roughly that about a half, or sometimes more than a half, of the organised fat is "lecithin."[17] It has also been repeatedly noted that the fatty acids which can be obtained by saponification of lecithin or other phosphatide lipoid substances are more unsaturated than those from adipose tissue.

It may therefore be that the work of the liver consists in the conversion of food fat into organised fat and that the desaturation of fatty acids is a change which occurs after that conversion has taken place; a change that is, therefore, removed from our ken so long as our knowledge of the nature and constitution of these lipoid molecules is as meagre as it is at present. The change may be brought about behind a veil within the mysterious circle of influence of the phosphoric acid and the nitrogenous basic constituents of these more complex molecules. In order to ascertain whether this is so Kennaway examined the acids of a number of extracts which I had prepared in fractions from normal and pathological livers.[18] The tissue was extracted repeatedly with alcohol, and then repeatedly with ether, in the cold. The solvents were evaporated off completely at a low temperature and pressure and the residue taken up in dry ether and filtered. The ethereal solution was treated with acetone, which, broadly speaking, precipitates phosphatides but dissolves simple glycerides or ordinary fats. The precipitate contains nitrogen and phosphorus in about the amounts found for the best characterised lipoid complexes or mixtures of these; the acetone solution contains these elements in about one-tenth of those amounts. The precipitated substances when saponified yield insoluble higher fatty acids, soluble in light petroleum, in amounts which fall within the limits of the amounts in known lipoids, less, at any rate, than 70 per cent. The unprecipitated substances contain amounts of these acids which approximate to those found in pure simple glycerides more or less closely—that is to say, to about 95 per cent. But the iodine value of the fatty acids obtained from the simple glycerides was invariably higher, and generally considerably higher, than that of the acids in adipose tissue fat. It was lower, it is true, than that of the acids in the lecithin fraction of the acetone precipitate, the fraction, that is, which is soluble in absolute alcohol, and perhaps still lower than that of the acids of the jecorine fraction, which is insoluble in alcohol as well as in acetone. It would seem, therefore, that even the simple glycerides in the liver are largely compounds of acids which have undergone the desaturation process; in so far as they are not, they consist of the raw material not yet dealt with in this way. The reaction involved, therefore, is not one that is carried out only in the lipoid molecules of which we know as yet so little but is comparatively accessible, and there is fair ground for hope that further work on the subject may bring to light much more that is definite with regard to it.

The same sort of change clearly has been carried out in the case of the fatty acids found in the liver of fish like the cod, which yield an oil with a high iodine value. A most interesting investigation into the nature of the acids contained in cod-liver oil has been carried out by Bull. He prepared the methyl esters of the fatty acids and distilled these in vacuo fractionally. From the different fractions he isolated, in addition to palmitic, stearic, and oleic acids, myristic, the saturated acid with 14 carbon atoms, and three other acids of the oleic series, one with 16 carbon atoms, clupeoleic, corresponding to palmitic in the saturated series, one with 20 called gadoleic and an erucic acid with 22 carbon atoms.

None of the acids isolated, however, account for the high iodine value of the mixed acids obtained by saponifying this oil, 150 or more. The isolation and characterisation of acids with more than one double link is a matter as yet of considerable difficulty. The most definite results have been obtained so far by oxidising the mixed acids with alkaline permanganate in the cold. Saturated acids are not attacked, unsaturated acids become saturated by the assumption of hydroxyl groups. Oleic acid thus becomes dihydroxystearic, linoleic becomes tetrahydroxystearic acid, and so forth. These hydroxy acids can be separated, purified, and identified, though the yields are not always very satisfactory. The further oxidation of these hydroxy acids on being heated with permanganate results in the cleavage of the acids into two parts, at the position of the original double bond. This is one of the ways in which ordinary oleic acid has been shown to have its double link exactly in the middle; for the two acids produced each contained nine carbon atoms, one being a di- the other a mono-carboxylic acid; thus

$$\underset{\text{Oleic acid.}}{C_8H_{17}.CH = CH.C_7H_{14}.COOH} =$$

$$\underset{\text{Pelargonic acid + azelaic acid.}}{C_8H_{17}.COOH + COOH.C_7H_{14}.COOH}$$

Another way of studying the unsaturated acids that has been much used is to saturate them with bromine and examine the products. The more bromine these contain, the more limited is the solubility in ordinary solvents.

Hartley has for some time been engaged on the study of the fatty acids present in various compounds in the liver of the pig. The results will be very shortly published in full, but some of the more striking results of his work may be

[16] Journal of Physiology, vol. xxxvi., p. viii.
[17] Archiv für Experimentelle Pathologie und Pharmakologie, vol. lii.
[18] THE LANCET, Jan. 9th, 1909, p. 95.

alluded to here. On oxidising with permanganate in the cold a dihydroxystearic acid is obtained which has a different melting point from that of the dihydroxystearic acid obtained from ordinary oleic acid or from the pig's adipose tissue fat. On further oxidation this acid breaks up but does not yield pelargonic and azelaic acid as the oleic acid in, for instance, the omental fat of pigs does. Hartley obtained pelargonic acid from this latter, but with the same treatment of the dihydroxystearic acid from the pig's liver he obtained again and again no volatile fatty acid but caproic. This seems to imply that the double bond in the hepatic oleic acid is in a different situation, not in the middle but one-third of the way down the chain starting from the unoxidised end. This, then, would be an instance of the transposition of the double bond to which reference was made earlier in the lecture.

The constitution of none of the linoleic acids that occur in nature, the 18 carbon acids with two pairs of unsaturated carbon atoms, is known. It is not known, that is to say, where the double links occur; there is obviously a large number of conceivable situations in which they might exist. Hartley has obtained from the fatty acids of the pig's liver one tetrahydroxystearic acid which melts sharply at a temperature a little above that given for sativic acid, the tetrahydroxystearic acid obtained from vegetable oils, and which on analysis gives figures agreeing exactly with the formula $C_{18}H_{36}O_6$. He has obtained also a certain amount of evidence indicating the presence of a second tetrahydroxystearic acid in the oxidation products of the liver fatty acids. This latter is more soluble in boiling water and has a lower melting point than the former. If possible it is hoped to identify the products of further oxidation of these acids derived from the linoleic acids in the pig's liver. It is these linoleic acids that seem to be the most abundant of the unsaturated acids in this organ and to be principally responsible for the high iodine value of the hepatic fatty acids.

But among the hydroxy acids which Hartley has obtained is a curiosity; one that from its solubility in water must evidently contain a large number of hydroxyl groups. It crystallises well, and melts sharply, and on analysis gives figures agreeing exactly with those for octohydroxy arachidic acid. This indicates the presence of an acid in the liver which has a chain of 20 carbon atoms and four double links. Further evidence of the occurrence of this acid he obtained in the formation of its octobromide on treating the acids with bromine. Anyone who has estimated the iodine value of the fatty acids from liver fats or oils must have noticed a precipitate that is formed by the iodine solution on reacting with the fatty acids. In the case of the acids from the pig's liver this precipitate appears to contain no hexabromide and to be composed entirely of this octobromide. This substance is insoluble in every solvent that has been tried, and is isolated only by extracting the bromination products successively with ether and benzene. This, of course, is not a very satisfactory way of arriving at a pure product. But several distinct preparations of the insoluble substance left have analysed correctly for octobrom-arachidic acid, and, taken together with the analysis of the oxidation product mentioned above, this seems to be fairly satisfactory evidence for the occurrence of this remarkable acid, $C_{20}H_{32}O_2$. Hartley estimates that it is present in fair amounts, and constitutes perhaps 8 to 10 per cent. of the acids in the pig's liver. An acid of the same formula is thought by Bull to be present in herring oil, whereas Tsujimoto obtained from this oil and from Japanese sardine oil an acid with 18 carbon atoms and four unsaturated links.

There are, indeed, clearly yet things to be learnt with regard to the fatty acids of the liver. But a beginning has been made and indications exist as to the nature of the biological significance of some of the facts that have already been determined. To assign its place in the metabolism of fats to this remarkable acid, however, is a task that we are not as yet equipped to undertake. It may be a product of that synthetic activity of which there is some evidence in the liver; but it is impossible to say. Small traces of arachidic acid occur in butter, and the corresponding alcohol, with 20 carbon atoms, has been found in the fat of dermoid cysts.

The more one works at the subjects on which I have had the privilege of addressing you this evening the more he becomes aware of the difficulties and obscurities that confront him. In view of these the few facts I have been able to muster present but a thin array which I have in vain tried to stiffen with thinner speculations. But a fact or two and a few changes of hypothesis constitute the journeyman investigator's stock in trade. And I have laid mine before you in the hope that you may be interested in them and in what I hope they may lead to.

A Clinical Lecture
ON
HERNIA OF THE ILIO-PELVIC COLON.

Delivered in St. Thomas's Hospital on Oct. 22nd, 1908,

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GENTLEMEN,—Hernia of this portion of the large intestine may occur in several different forms, the common feature grouping these being the presence in the hernial sac of that part of the colon hitherto known as the sigmoid flexure. This name, however, is now being abolished, surgeons falling into line with the present anatomical nomenclature based upon more exact ideas as to the disposition of the terminal part of the colon.

According to the old descriptions the descending colon at the level of the iliac crest passed into the sigmoid colon, the latter again ending at the sacro-iliac synchondrosis in the first part of the rectum. The sigmoid was described as forming a loop with its two limbs in close relationship and with a mesocolon of varying length. Such a description might be applicable in the child with a small pelvic cavity, but this certainly has been shown not to be the case in the adult. Treves and others pointed out that the free first part of the rectum with its meso-rectum formed an important share in the loop. Jonnesco split up the sigmoid loop into the iliac and pelvic colons, terms now universally accepted, and the old so-called first part of the rectum is now merged in the pelvic colon. The iliac portion is the direct continuation of the descending colon. Beginning at the crest of the ilium at the outer margin of the psoas it passes down on the upper part of the iliacus and turns inwards over the psoas and across the bifurcation of the common iliac vessels to become at the brim of the true pelvis the pelvic colon. The pelvic colon forms a loop which ends at the second or third sacral vertebra.

The arrangement of the peritoneum over both the iliac and pelvic colons and the variations in the length and course of the iliac colon are matters of vast importance to the surgeon. It is considered by anatomists that as a rule the iliac part has the same arrangement of peritoneum as has the descending colon—i.e., there is no mesocolon. Jonnesco estimates that in 10 per cent. a mesocolon is present and that when such is the case its length does not exceed one inch. The mesocolon of the pelvic portion at its deepest part is usually about three inches but it is not at all uncommon for its length to be increased. If the pelvic colon is thus rendered more mobile there is a greater chance of its finding its way into a hernial sac as a free portion of bowel as the small gut does. It is superfluous to point out the important bearings the arrangement of the peritoneum here has in dealing with the bowel in the operation of inguinal colotomy. Our attention was especially drawn to the variations in the course of the iliac colon and in its peritoneal relations by a former surgeon to this hospital, Mr. William Anderson.[1] The iliac colon in its descent has a curve concave upwards and inwards. Its length and its bend may be so increased that the bowel passes down to Poupart's ligament along the whole length of which it may run. In the particular case which he records the length of the iliac colon was eight and a half inches, and this had a mesocolon, when the bowel was undistended, of about half an inch in length. Another important condition which he describes is that when the iliac colon occupies the same close relationship to Poupart's ligament the peritoneum may be directly reflected off the bowel on to the anterior abdominal wall so as to leave a part

[1] Anderson: Proceedings of the Anatomical Society, June, 1897.

of the wall of the gut uncovered by peritoneum and in direct relation with the posterior wall of the inguinal canal[2]; here, if a small hernia forms it has only a partial or no sac, while if the hernia is large a marked feature will be its irreducibility.

To pass now to the clinical side of the subject, the old term sigmoid hernia would comprise those herniæ containing a part of the large gut between the descending colon and the rectum—that is, either the iliac or pelvic colons. In the first group we have large bowel free in the hernial sac and proved not to be transverse colon by the absence of the attached omentum and of course not cæcum; unless anything untoward happens this bowel should be reducible in its entirety into the abdominal cavity. It may be assumed on anatomical grounds that the portion of colon is more likely to be the pelvic loop, particularly if the patient is an adult, but direct proof can be obtained by passing the finger into the abdominal cavity and tracing the bowel to its attachment. Cases falling into this group, however, are more often met with in children and in them it may not be with the pelvic loop only that we have to deal, for we must bear in mind the limited size of the pelvic cavity, the greater likelihood of a well-marked mesocolon to the iliac part, and also the possibility of the retention of a more fœtal arrangement of the peritoneum. Although these herniæ are more often met with on the left side, the right inguinal sac may occasionally contain this part of the bowel, and this is more often the case in children.

The following cases may be quoted in illustration:—

CASE 1.—A boy, aged 13 years, was admitted to hospital with a swelling in the left inguinal region extending as far as the external ring. It had existed for some considerable time and could be easily reduced. At the operation on June 11th, 1908, it was shown to be a funicular hernia with a constriction in the sac half way down the canal. In the lower half of the sac was a long appendix epiploica and in the upper half was a loop of pelvic colon to which the appendix was attached. The gut was quite free in the sac and easily reducible. On introducing the finger into the peritoneal cavity the gut was proved to be the pelvic colon; the iliac colon had practically no mesocolon and was normally placed. The hernia was radically cured.

CASE 2.—A boy, aged 13 years, was operated on on Sept. 18th, 1908, for a left hernia which had been present for two years, coming on rather suddenly after climbing a tree. The hernial swelling extended down into the scrotum to the top of the testis; there was apparently fluid in the sac with a well-marked impulse. The sac in the canal and scrotum was surrounded by the cord structures and difficult to separate. At the upper part of the canal it had a peculiar arrangement. In front there was a funnel-shaped sac extending about one inch below the internal ring and in this was a loop of pelvic colon; from the back part of this sac at the internal ring came a tubular process which was continued among the elements of the cord to the scrotum and contained fluid. Both sacs were removed and a radical cure was done.

The following very interesting case was under my care at the East London Hospital for Children, Shadwell, in May, 1906.

CASE 3.—A male infant, aged nine months, had had a double inguinal rupture from birth which a truss did not control. On the left side was a large scrotal hernia which at the operation was found to contain the cæcum, vermiform appendix, and a loop of large intestine, all easily reducible; the latter consisted of a part of both iliac and pelvic colons. The sac was a funicular one with the cord elements spread out all round it. The right hernia, which was small, contained small gut; here a radical cure was also done.

In this case the presence of the cæcum and appendix on the left side showed that the normal arrangement of the peritoneum did not exist and that the ascending colon had a mesocolon. It is probable that the same was present on the left side for the descending colon, for the iliac colon was very freely moveable.

It might be expected that on the left side a direct inguinal hernia might contain a free loop of large gut and such does occur.[3] Part of the ilio-pelvic loop may be found in the sac of a femoral hernia, especially on the left side.

CASE 4.—A woman, aged 59 years, was admitted to hospital with a strangulated left femoral hernia on May 24th, 1907. The hernia had been present for many years but had always been reducible and for which she had worn a truss. For six days before admission the hernia had been irreducible, accompanied by pain and sickness; there had been an action of the bowels on the 23rd with blood. At the operation ten inches of large gut with appendices were in the sac; the gut was congested and had a good polish. After enlarging the seat of constriction the bowel was easily replaced and the sac removed. There was no omentum, either free or attached to bowel, in the sac. As ascertained by the finger the bowel consisted of the pelvic and a small part of the iliac colon.

A case of the same type was the following where the large gut was just engaged in the neck of the sac and a large appendix epiploica with fluid formed the contents of the sac.

CASE 5.—A woman, aged 33 years, was admitted complaining that for a fortnight she had felt unwell with abdominal pain, constipation, and loss of appetite. For the last four days she had noticed a tender lump in the left femoral region. When seen she had an irreducible hernia which was immediately operated on. The sac contained fluid, turbid and blood-stained, and a congested appendix epiploica, and there was no trace of omentum to be made out attached to the large bowel; the finger traced it to the pelvic colon.

I now pass on to the consideration of a series of cases where the ilio-pelvic loop has been found in a left inguinal sac but is irreducible. These are not instances where the irreducibility has been caused by adhesions between the previous free bowel and the sac wall, but cases where the bowel is only partially covered by peritoneum and has the same relationship to the sac wall as ensues in a hernia of the bladder. Stoney[4] has drawn our attention to the fact that the portion of bowel so involved is the iliac colon. Now the iliac colon can occupy this site under three conditions which he has used to group the cases, and which grouping I shall follow here.

The first group is the analogue of what is met with on the right side, a hernia of the cæcum of congenital origin associated frequently with some defective descent of the testis. In these cases it has been shown that an aberrant attachment of the gubernaculum is responsible for this condition, and Lockwood has maintained that there is the same close relationship on the left side between the testis and the ilio-pelvic loop. The following case may be cited as an instance of this form.

CASE 6.—A man, aged 53 years, was admitted with an obstructed hernia. He had had all his life a left hernia with, so far as he knew, no testis on that side. There was no trouble with the hernia until he was 33 years old, when pain and aching started which had continued on and off for 20 years; the pain complained of was referred to the upper part of the inguinal canal. He had never worn a truss. Ten days before admission he had had trouble with his bowels and it was six days before they acted; each day since there had been practically no action. On admission there was considerable abdominal distension with pain of a griping character. There was a hernia in the left inguinal region and no evidence of any testicle. There were gurgling on manipulation and tenderness and very little impulse. A turpentine enema and the passage of a long tube produced no result. At the operation the inguinal incision exposed a thickened sac and on cutting into this a very imperfect testis was found spread out on its deep surface. This sac ended below at the external ring and above it did not communicate with the peritoneal cavity. Behind this sac was a second one which on being opened up was found to contain a lot of clear fluid with a knuckle of large intestine engaged in the neck of, and attached to, the posterior wall of the sac; this bowel was only in part covered with peritoneum. The elements of the cord were between the two sacs. The anterior sac and testis were removed; part of the posterior sac after separation was cut away and the remainder was stitched up and reduced with the bowel behind the abdominal wall and the hernia radically cured.

[2] Anderson: Brit. Med. Jour., August, 1895.
[3] Robinson: Brit. Med. Jour., Sept. 19th, 1908.
[4] R. A. Stoney: Hernia of the Iliac Colon, THE LANCET, March 7th, 1908.

In considering the nature of this hernia there are points of interest. In the first place, it rightfully belongs to this group, for the condition was undoubtedly congenital, and secondly, it may be classed as an infantile hernia and it agrees with the conditions laid down by Lockwood for such. The front sac would be interpreted as the processus vaginalis closed at or near the internal ring and much higher than usual, whereas the posterior sac had been drawn down behind by the gubernaculum.

In the second group the iliac colon comes into the hernial sac through traction on the peritoneum lining the iliac fossa. Here its presence is quite secondary to the other constituents of the sac, whether they be small gut or omentum. We have to deal with a hernia of fairly large size in which as the sac has increased there has been dragging down of the iliac colon with it. This process is comparable with what occurs to the bladder in large herniæ, this viscus being drawn into the neck or down the posterior wall of the sac. With the iliac colon, however, its presence in or about the neck of the sac may probably be induced the more easily by its attachment to the iliac fossa being lower than usual.

CASE 7.—A man, aged 64 years, had had a hernia for 50 years on the left side for which he had worn a truss and the rupture had always been easily reducible. Three years ago after a fall it became irreducible, but it was subsequently reduced without after trouble. 20 hours before admission he had acute pain in the hernia and constipation; there was a large hard swelling extending down the inguinal canal into the upper part of the scrotum, unaffected by a hot bath or taxis. At the operation there was a large amount of omentum in the sac and the iliac colon was fixed in its posterior wall. Some of the omentum was cut away and the rest reduced. Part of the separated sac was removed and a purse-string suture was used to bring together the rest and it was reduced with the bowel into the iliac fossa.

In the third group we can definitely place those cases where the iliac colon is the sole occupant of the sac, or, if not the sole, the main one, the other contents, be they gut or omentum, being so small that they could not exert any marked traction on the parietal peritoneum. In this variety, if the iliac colon has its normal position originally, the subperitoneal supporting tissue has become defective and the contraction of the abdominal muscles leads to a sliding down or ptosis of this part of the bowel towards the inguinal canal. This form has been termed hernia en glissade. Variations from the normal site usually give the colon a closer relationship to the inguinal canal and hence a greater likelihood of the passage of the bowel through the ring. As a direct cause an injury may seem to start the process. The following cases, all of which, I think, may be fairly placed in this group, I have operated on within the past two years.

CASE 8.—A man, aged 32 years, had had an operation for a right inguinal hernia in St. George's Hospital in 1897, but there had never been any hernia on the left side. One month before coming under my care he had a bad fall, fracturing his leg, and almost immediately he detected the rupture. There had been no pain or other symptoms with it. The swelling descended half way down the canal and though it could be reduced it was with difficulty kept back. At the operation the sac was found to contain the iliac colon in relation with the inner wall and the gut had an incomplete peritoneal investment. There were no other contents of the hernial sac. The redundant sac was cut away and the portion remaining in close relation with the bowel was sutured up and the bowel was replaced in the iliac fossa. A Bassini's radical cure was effected.

CASE 9.—A man, aged 59 years, had had a small lump at the left internal ring for two years. Until three weeks before admission it had not altered, but it then became suddenly larger without any apparent reason. There was no pain or vomiting. The hernia since its increase in size had become irreducible. The operation showed that the iliac colon was the main constituent of the sac and was incorporated in its wall, so that a considerable non-peritoneal area of the colon was in direct contact with the posterior wall of the canal. The main part of the sac was removed and the rest was brought together by a purse-string suture and the bowel was returned into the iliac fossa. A radical cure was done after Bassini's method.

CASE 10.—A man, aged 62 years, had had a hernia in the left inguinal region for a few years which never had been able to be properly reduced and which became much larger on standing. There had never been any particular pain or discomfort with it. The sac was found on operation to contain the iliac colon; part of the bowel was in direct contact with the inner wall of the canal and with not more than half of its circumference covered by peritoneum, but the lower part was more free and almost completed invested by peritoneum. There were also some inflammatory adhesions between the bowel and the sac wall. Owing to the defective sac none of it had to be removed. The bowel was pushed back into the iliac fossa and a radical cure done.

CASE 11.—A man, aged 30 years, first noticed a rupture eight years before and wore a truss; for about three years he had no bother with it but afterwards it became difficult to keep back and was a great inconvenience to him in his work which was heavy, he being a fireman on a railway engine. The bulk of his hernial swelling, which came down to the external ring, could be reduced, but there was left as a residue some thickening about the neck of the sac. Some of the pelvic as well as the iliac colon was in the sac; some of the latter was excised and the remainder was closed by a purse-string suture and it and the bowel were pushed back into the iliac fossa which was very easy to do as the bowel was very loose in its subperitoneal bed.

In dealing with these cases there are a few points to be attended to at the operation. One is to be careful in freeing the non-peritoneal portion of the bowel from its connexions not to strip away too vigorously the subperitoneal connective tissue, as thereby the vascular supply to the bowel may be seriously impaired. Another point to bear in mind is that the iliac colon, although replaced in the iliac fossa, will be still fairly mobile and unless the abdominal wall is strengthened as well as possible over the site of the internal ring there will be a tendency for a return of the bulging at this spot.

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ANURIA WITH NECROSIS OF THE RENAL CONVOLUTED TUBULES.

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TEN years ago Dr. J. Rose Bradford and Mr. T. W. P. Lawrence published a paper entitled "Endarteritis of the Renal Arteries Causing Necrosis of the Entire Cortex of Both Kidneys."[1] Their case was that of an anæmic-looking woman, aged 36 years, who was stated to be quite well up to a day on which she gave birth to a dead child. She lost a good deal of blood, but otherwise her labour appeared to have been a normal one. After her confinement she was sick once and complained only of headache and slight drowsiness. Yet there was practically complete anuria from the time of her confinement until her death seven days later. A few teaspoonsfuls which were obtained by catheterisation contained a small quantity of albumin and some pus. There was no fever. Though the patient gradually lost strength there was throughout a remarkable absence of the usual uræmic symptoms, such as coma, delirium, convulsions, vomiting, dyspnœa, amaurosis, &c. The clinical picture was, in fact, not that generally supposed to be associated with so-called "non-obstructive" suppression of urine (as occurring in Bright's disease), but rather that of "obstructive" suppression of urine, as occurring, for instance, when in an individual with only one kidney the ureter of that kidney becomes blocked by a calculus.

At the necropsy practically no disease was found except in the kidneys, both of which were slightly enlarged and as well macroscopically as microscopically similar to each other in appearance. The convoluted tubules throughout the whole of the cortical substance (including the columns of Bertini) of both kidneys were necrotic, with the exception of a very narrow zone at the junction of the cortex and medulla. The epithelial cells lining these tubules would hardly stain at all with logwood and their nuclei could not be differentiated from the cytoplasm. The glomerular epithelium was to some extent affected in the same way. A zone of the cortical tissue just beneath the capsule and a zone adjacent to the medulla showed congestion and small cell infiltration, but there was no increase of interstitial

[1] Journal of Pathology and Bacteriology, Edinburgh, 1898, vol. v., p. 195

fibrous tissue in any part of either kidney. The renal artery and its primary branches showed some thickening, but the change on which the authors chiefly insisted was an arterial thrombosis, which apparently involved (and was practically confined to) all the interlobular arteries of both kidneys and their branches, including all the glomerular arterioles given off distally to the point of thrombosis (distally to the junction line of medulla and cortex). As far as I can make out from their paper Dr. Bradford and Mr. Lawrence regarded the thrombosis of the interlobular arteries as a sudden lesion perhaps in some way associated with the pregnancy and as the cause of the cortical necrosis and fatal anuria.

In 1905 Dr. W. S. A. Griffith and Dr. W. P. Herringham described a similar case under the heading "A Case of Necrosis of the Entire Renal Cortex of Both Kidneys, together with Thrombosis of all the Cortical Arteries, occurring in the Puerperal State."[2] The patient, a woman, aged 35 years, a multipara, who had had symptoms of chronic nephritis for several years, was delivered of a dead child and 12 ounces of old clot immediately after admission to the Queen Charlotte's Hospital. From that time until her death, nine and a half days later, she passed only ten ounces of urine, and none at all was passed during the last six days of her life. The small quantity of urine obtained for examination was clear and contained a trace of albumin and renal casts. Ordinary uræmic symptoms were almost absent till the end. At the post-mortem examination the left ventricle of the heart was found to be somewhat hypertrophied. The kidneys to the naked eye closely resembled those in Bradford and Lawrence's case, but microscopic sections showed a difference between the cases in two respects. In Griffith and Herringham's case, unlike that of Bradford and Lawrence, there were (1) decided changes due to chronic interstitial nephritis, whilst (2) evidence of endarteritis was practically wanting. But the cortical necrosis, the thrombosis of the interlobular arteries, and the presence of areas of small cell infiltration were common to both cases.

On reading the account of the last case Dr. H. C. Lloyd of Melbourne, Australia, published an almost identical one in THE LANCET.[3] The patient, a woman, aged 39 years, a multipara, was delivered of a stillborn child in the Women's Hospital at Melbourne. From that time she passed no more than about 11 ounces of urine (which contained albumin) until her death, eleven days afterwards. There were several eclamptic convulsions during the first few hours after delivery and later some vomiting and uræmic twitchings, but consciousness was preserved till the end. The temperature was normal or subnormal throughout. At the necropsy the kidneys, according to the description of the pathologist, Dr. Constance Ellis, who examined them, resembled closely those in Griffith and Herringham's case, but (on microscopic examination) unlike those in Bradford and Lawrence's case (which they likewise macroscopically resembled), they showed the presence of chronic interstitial fibrosis without obvious endarteritis. In regard to the thrombi in the arteries Dr. Lloyd remarks that they "seem to indicate the possibility of some agglutinin, though why it should operate only in arteries in such a limited area is mysterious."

I gather that all the foregoing authors regard the thrombosis of the interlobular arteries as the cause of the necrotic changes in the renal cortex. This conclusion seems to me an exceedingly improbable one. There is nothing in the descriptions of the thrombi to indicate that they were formed several days before the death of the patients. Moreover, how can the simultaneous occurrence of thrombosis involving (but limited to) all the interlobular arteries of both kidneys be accounted for except as being in some way secondary to the inflammatory and degenerative changes involving the active secreting tissue (convoluted tubules) of both kidneys? In all these cases the presence of an inflammatory reaction of some kind was proved by the small cell infiltration observed. In the first two cases this was specially located in the portions of the cortex adjacent to the medulla, where, in Griffith and Herringham's case, the infiltrating cells somewhat resembled pus cells. An explanation which makes the occurrence of thrombosis in some way secondary to acute changes in the convoluted tubules appears to me the most likely one to be correct, but before considering this question further I will shortly describe a recent case at the German Hospital which may perhaps help to throw a little light on the subject.

The patient was a strongly built man, aged 69 years, a cabinet-maker, who said that he had never been seriously ill before. His legs were somewhat swollen in August, 1908, and he had difficulty in passing urine. This was said to have contained albumin. Early on Nov. 20th he failed to pass any urine at all, and, after a medical man had tried in vain to draw off some with a catheter, he was sent to the German Hospital (Nov. 22nd) on the supposition that an operation was needed.

On admission to the surgical side of the hospital, under Dr. E. Michels,[4] considerable prostatic enlargement was felt and was thought to be due to carcinoma. The right leg was somewhat œdematous. Bronchitic sounds were heard over the chest. The systolic brachial blood pressure was found to be 180 millimetres of mercury. There was considerable tremor, which, however, appeared to be habitual and not of recent onset. The mental condition was quite normal. In the hospital no urine was passed and none could be obtained by catheterisation. Treatment by the hot-air bath, purgatives, subcutaneous injection of normal salt solution, and caffeine by the mouth made no difference. Dr. Michels (Nov. 24th) cut down on the right kidney from the loin, incised it, and inserted a drainage-tube into the renal pelvis, but the operation had no effect and no urine came from the wound. There was never any fever. The pulse-rate varied from 72 to 102 per minute. After Nov. 26th the patient was sometimes very restless, especially in the night, and he wandered in his mind. He became decidedly weaker and died on the evening of the 28th, about eight and a half days after the onset of complete anuria. His systolic brachial blood pressure on the morning of the day of his death was found to have fallen (from 180) to 140 millimetres of mercury. There was considerable œdema of his legs at the end.

The post-mortem examination was practically limited to the prostate gland and the two kidneys. The prostate gland was much enlarged and microscopic examination showed the enlargement to be due to carcinoma. The prostatic tumour had, however, not obstructed the ureters, for there was no dilatation of ureter or renal pelvis on either side. The right kidney was somewhat contracted. The left kidney (the one not operated on) was large and congested; the markings dividing it into cortex and medulla were quite distinct; its capsule stripped readily.

Microscopic examination showed decided evidence of old chronic interstitial nephritis in both kidneys, but chiefly in the right (smaller) one. In the left kidney the evidence of old disease was limited to a slight amount of interstitial fibrocellular increase and to chronic degenerative change in a few of the Malpighian corpuscles. The acute recent parenchymatous changes could be best studied in the left kidney on account of its substance having been relatively little altered by older disease. The epithelium of the convoluted tubules had more or less all of it undergone a necrotic change. The secreting cells had a granular, "woolly" appearance and hardly took on the logwood stain at all; their nuclei had mostly disappeared (karyolysis) or could hardly be distinguished from the cytoplasm. The other renal tubules, glomeruli, and blood-vessels showed practically no changes excepting those due to a certain amount of old chronic interstitial nephritis. None of the blood-vessels seemed to be thrombosed. In addition to a certain amount of interstitial fibrosis there was here and there a little small cell infiltration, especially near the Malpighian corpuscles. Some of the interstitial tissue in the medulla appeared swollen and transparent as if it had undergone a hyaline or mucoid change. In the right (smaller) kidney the degeneration in the convoluted tubules was similar but could not be so well studied owing to the presence of considerable changes due to the old interstitial nephritis and small cell infiltration, the latter especially in the subcapsular portion of the cortex. Sections of both kidneys were specially stained for microbes, but those found appeared (from their position, &c.) to be of post-mortem growth only.

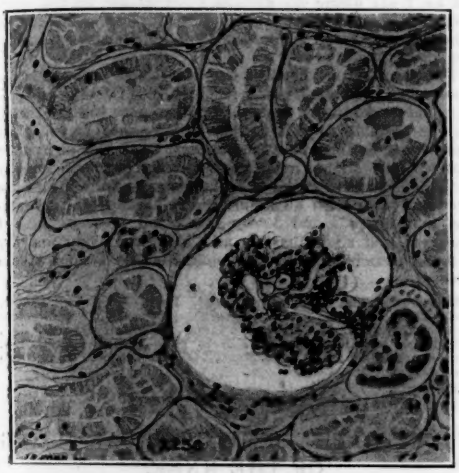
The above case resembles the three other cases in the

[2] Published somewhat later in the Journal of Pathology and Bacteriology, 1906, vol. xi., p. 237.

[3] THE LANCET, Jan. 20th, 1906, p. 156.

[4] I have to thank my colleague, Dr. Michels, with whom I saw the case in the hospital, for his kind permission to write this account. The case will probably be later described in greater detail by Dr. Jurasz, one of the house surgeons at the hospital.

association of fatal so-called "non-obstructive" anuria with widespread necrosis of the secreting cells of the renal convoluted tubules, but it differs from the others chiefly in the absence of obvious microscopic signs of thrombosis of the interlobular arteries of the kidneys. The Malpighian corpuscles showed little or no acute changes. It seems to me that the one essential change in all the above described cases is the widespread necrosis of the secreting cells of the renal convoluted tubules and that this change is merely an extreme degree of the change known as "granular degeneration" or (in its earliest form) as "cloudy swelling," a change which is probably present to a greater or less extent in all cases of acute nephritis and in many toxæmic conditions. I suppose that when for any reason (e.g., violence



The figure is drawn from a portion of the cortex of the left kidney (magnification 250) and shows a Malpighian corpuscle surrounded by convoluted tubules, the epithelium of which is necrotic. The secreting cells are mostly detached or broken up and scarcely take on the logwood stain at all. Their nuclei have disappeared (karyolysis) or are hardly to be distinguished from the cytoplasm.

of the local or general exciting cause, want of cell vitality from previous disease, or otherwise) the cloudy swelling and degeneration rapidly pass on to actual cell necrosis the convoluted tubules become mechanically blocked and more or less complete anuria results.[5] At a later stage perhaps the interlobular arteries and their glomerular branches become thrombosed (as in the three cases first referred to) and then the glomeruli likewise degenerate. As I have already explained, it is, I believe, more rational to regard thrombosis of all the interlobular arteries, when it occurs, as secondary to the parenchymatous necrosis than to regard the parenchymatous changes as altogether secondary to the arterial thrombosis. Perhaps the necrosis of the glandular cells produces a substance having a hæm-agglutinative action which favours thrombosis in the neighbouring blood-vessels.

Hæmaturia at the commencement of attacks of acute nephritis may have a beneficial effect by relieving pressure—that is to say, it may represent an automatic conservative measure on the part of the organism. Probably all cases of so-called non-obstructive suppression of urine (non-obstructive anuria) should be regarded as representing an exaggerated form of the functional and morphological changes in the renal cells that occur in all cases of acute nephritis or acute exacerbations of chronic nephritis or as the result of the actions of various toxic substances on the kidneys. What was the immediate exciting cause of the acute parenchymatous degeneration in the present case is not quite clear, but certainly the kidneys were already diseased; and in regard to another abdominal viscus—namely, the liver—it may be remembered that acute parenchymatous degeneration of hepatic cells is known occasionally to supervene in previously diseased (cirrhotic or enlarged and fatty) livers.

Harley-street, W.

[5] Perhaps temporary anuria may sometimes be a mechanical result of swelling (without actual necrosis) of the secreting cells of the convoluted tubules. I do not, however, wish to imply that all cases of so-called "non-obstructive anuria" are really obstructive and due to mechanical blocking of the convoluted tubules from swelling (with or without actual necrosis) of their epithelium.

ADDISONISM AS A FAMILY DISEASE.

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WHILE the disease associated with the name of Addison is now recognised as comparatively common, it is surprisingly rare in children. In a recent paper published in the *New York Medical Journal* Felberbaum and Fruchthandler in describing a case in a girl, aged 12 years, mentions that in a summary of the literature they have only succeeded in collecting 25 cases occurring in children under 13 years of age. Of the 25 cases 12 occurred between the ages of 10 and 13 years, 4 between five and 10 years, while 9 occurred below the age of five years. Under the circumstances a report of the following three cases, members of the same family, which came under my observation as physician to the Royal Dispensary, Edinburgh, is not without interest.

CASE 1.—The patient was a girl, aged nine years. The father and mother were alive and well, and of four sisters the eldest was 17 years of age, the second had been still-born, the third was six years of age, and the fourth was aged three and a half years. There was no history of previous similar trouble in the family, but a grandmother and uncle had died from pulmonary tuberculosis. The child, who was healthy at birth, had been breast-fed. There was no history of congenital syphilis. She had suffered from chicken-pox at the age of one and a half years but from no other infectious diseases. Pneumonia had been experienced at the ages of nine months and 18 months, she had been treated three times subsequently in the Royal Hospital for Sick Children for "chest trouble," and during the last three years had been feeling very "tired." For the last year her skin had been becoming very dark brown and from time to time this had been more marked. The patient was often too tired to do exercises at school, did not run about at play, and at times felt very sick and vomited occasionally. On examination she was found to be thin and appeared to be poorly nourished. The skin was dark in colour and at certain sites the pigmentation was more intense; round the hips, where the pressure of the clothes fell on the body, the pigment was very dark. The popliteal spaces, where the garters rubbed up and down with each movement of the knee-joint, were very dark. Pigmentation was marked at the umbilicus, in the folds of the axillæ, and in the creases of the hands, but it was interesting to note that those parts of the axillæ where no pressure fell failed to show pigmentation. There was a scar on the left malleolus round which there was deep pigmentation. A more recent scar under the instep showed signs also of commencing pigmentation. A point of great importance was the absence of involvement of the buccal mucous membrane. In addition to the cutaneous pigmentation already noted, there were numerous black spots of about the size of a pinhead scattered about the body. There was nothing abnormal to note with regard to the circulatory system. A blood count gave the following results: red cells, 4,820,000; hæmoglobin, 80 per cent.; and white cells, 8200. A differential count gave the following percentages: Polymorphonuclear cells, 68; lymphocytes, 29; large mononuclear cells, 1; eosinophiles, 2; and mast cells, 0. The measurement of the blood pressure (Riva-Rocci) gave a maximum systolic pressure of 90 millimetres of mercury. With regard to the respiratory system, there was nothing abnormal to note except that the note on percussion over the left apex was slightly higher in pitch than the right. The patient's weight was 3 stones 5 pounds. Pirquet's cutaneous tuberculin reaction gave a negative result, while the result given by Calmette's tuberculin reaction was positive.

I am much indebted to Dr. G. A. Gibson and Dr. F. D. Boyd for having admitted this case to their wards in the Royal Infirmary and the Deaconess Hospital respectively and so enabling me to study the case more thoroughly than otherwise would have been possible.

CASE 2.—The patient, aged six years, was well nourished but listless, and did not run about at play but preferred to sit still. Diarrhœa was occasionally suffered from. There was a band of pigmentation round the neck. The posterior folds of the axillæ were also slightly pigmented and there were a well-marked band of pigmentation round the waist and a slight darkening behind the left popliteal space, but there was no involvement of the mucous membrane. There was no other abnormality of note. The blood pressure as measured by the Riva-Rocci instrument showed a maximum systolic pressure of 105 millimetres of mercury.

CASE 3.—The patient, aged three and a half years, was poorly nourished and very listless. Pigmentation involved the neck very slightly and was fairly well marked round the waist, but was not present in other situations. The maximum systolic pressure was 98 millimetres of mercury. The blood showed no abnormality. The eldest sister, aged 17 years, showed no abnormality.

From a study of the three cases, it can hardly be doubted that at any rate Case 1 was a true case of Addison's disease. The prostration, the asthenia, the distribution of the pigmentation, the low blood pressure, and the occasional vomiting go to make a typical picture of the disease, and the only important negative point in this case (common to the three cases) is the absence of pigmentation of the buccal mucous membrane. The second and third cases, while showing only one of the cardinal signs of Addison's disease—namely, pigmentation, must with a knowledge of the elder sister's condition be viewed with suspicion. The low blood pressure, especially well marked in Case 3, is also a point of great significance. To revert to Case 1, an especially interesting feature is the fact that a positive result was obtained by Calmette's tuberculin reaction as pointing to a possible tuberculous condition of the suprarenals. The lesions found post mortem in the adrenals in Addison's disease are in a large majority of cases tuberculous—namely, fibro-caseous. Thus Rolleston in the Goulstonian lectures in summarising the causes of Addison's disease says: "The first [fibro-caseous due to tuberculosis] is the only common cause of Addison's disease." The absence of any definite signs of tuberculous disease, glandular or respiratory, would point to the possibility of a similar lesion present in the case described. The cases as a whole present three main features of interest: (1) the age of the patients; (2) the family character of the disease; and (3) the low blood pressure in each case. How rare the condition is in children under 13 years of age has been shown, as mentioned by the statistics of Felberbaum and Fruchthandler.

The family character, if we accept Cases 2 and 3 as true cases of Addison's disease, is even more rare, for the only published record is that given by Fleming and Miller,[1] where a mother and four of her children were affected.

Before discussing the third main point of interest—namely, the low blood pressure—it may be well to review briefly some features in regard to the structure and function of the suprarenals as detailed by Rolleston. The suprarenals are composed of (1) the cortex derived from the cœlomic epithelium in the Wolffian ridge and closely related to the sexual glands; and (2) the medulla derived from the sympathetic and neuro-ectodermal in origin. As regards the cortex, our imperfect knowledge of its functions points to the following inferences: (*a*) that it is related to growth and development; (*b*) that it has the power of neutralising poisons; and (*c*) that it is in some way concerned with the internal secretion of the medulla. The function of the medulla is briefly to produce an internal secretion which raises blood pressure by acting on the terminals of the sympathetic.

In the light of this knowledge it is significant to note that the main symptoms in Case 1 are (*a*) pigmentary changes, (*b*) asthenia and prostration, and (*c*) low blood pressure, while in Cases 2 and 3 the pigmentary changes are not so marked but the blood pressure is low. A study of these facts seems to suggest that in cases similar to Case 1 both cortex and medulla are affected, while in those similar to Cases 2 and 3 the medulla is primarily affected and the cortex only slightly so. This view of the cases is in accordance with a hypothesis formed by Dr. Gibson in his address to Guy's Hospital Physical Society in 1907. He says: "It may be supposed that Addison's disease may result in part from inadequacy of the medullary portion leading to asthenia and hypopiesis by loss of adrenalin and by failure of the cortex to maintain certain as yet unknown, but probably important, functions particularly associated with pigmentary excretion and toxin destruction. On this view there may be a most variable assemblage of symptoms, according as the one or the other portion of the suprarenal body is mainly affected." It is impossible to dogmatise from three cases, but as a pure speculation this hypothesis is interesting and the cases recorded appear to add weight to it.

It would be interesting to know in what part of the suprarenal gland the tuberculous lesion begins in Addison's disease—namely, whether the cortex or the medulla is first affected and whether the course of the symptoms is affected differently according as to where the lesion commences. So far as I am aware no definite observations on this point occur in literature, the reason probably being that by the time the cases reach the post-mortem table the lesions involve the whole gland.

The value of a knowledge of the blood pressure in the disease has been emphasised recently, and Cases 2 and 3, if accepted as Addison's disease, would appear to show that it may be possible to still further differentiate types of the disease and to diagnose a case as such when the pigmentary changes are slight or absent. Stursberg has recently published cases in which the diagnosis of Addison's disease has been made with an almost entire absence of pigmentation and Cases 2 and 3 with low blood pressure, general weakness, and slight gastric and intestinal symptoms may well be associated with the characteristic lesions of the disease.

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Edinburgh.

INJURY TO THE SEMILUNAR CARTILAGES OF THE KNEE.

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SINCE William Hey more than a century ago published[1] an essay on "Internal Derangement of the Knee-joint," surgery has advanced so materially that knowledge of its pathology through operations on the living has now cleared up many things that were then matters of opinion only. The knee-joint has not escaped this advance, but it is because I think it is possible to make a further small addition to our definite knowledge that I am induced to offer these notes based upon 75 cases operated upon by me from January, 1900, to September, 1908, on injury to the semilunar cartilages.

It appears to be assumed by authorities that the pathology of these cases is mainly a displacement of the semilunar cartilage, due to a relaxation of the coronary ligaments, but the cases I have seen and operated upon prove that this is wrong, that *the* injury is a fracture of the cartilage and that displacement without fracture, if it occurs at all, is a very rare event. Of the 75 cases 27 were split longitudinally, 14 were split and detached circumferentially, 8 were split transversely across, 6 were split both transversely and longitudinally, 5 were reported loose, and 5 were reported rupture only. Of 10 the pathology is not recorded. (See illustrations, Figs. 1 to 6.)

It is of some importance to note that all of the cases reported loose were done in the period when I was unable through an imperfect incision to make a satisfactory examination of the joint, and that during the last two years, since the fact that fracture of the cartilage was the true pathology occurred to me, no case of my own or of my colleagues has been seen to refute this view. On a recent occasion I would have missed the fracture had I not been convinced that it could be found if searched for; and found it was, but so far back in the joint that it could not be seen even

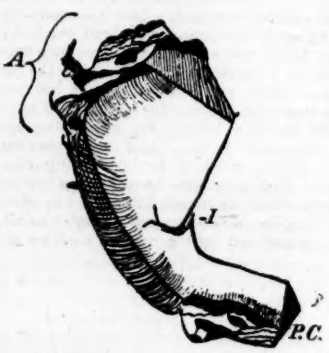
[1] Brit. Med. Jour., April, 1900.

[1] Practical Observations in Surgery, 1803.

FIG. 1.

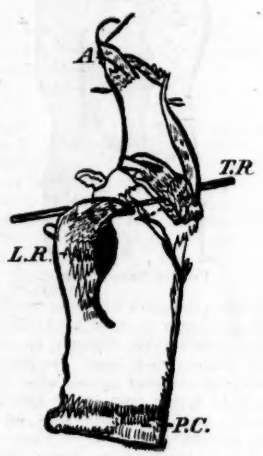
Right internal semilunar cartilage showing longitudinal rupture. A, Anterior end. G, Glass rod. L, Line of strata separated longitudinally, P. Posterior end.

FIG. 2.



Right internal semilunar cartilage. A, Anterior end detached circumferentially. I, Inner border thinned out between bone ends, with transverse rupture. P.C., Posterior cut end.

FIG. 3.



Right internal semilunar cartilage. Under surface. A, Anterior end. T.R., Transverse rupture. L.R., Longitudinal rupture. P.C., Posterior cut end.

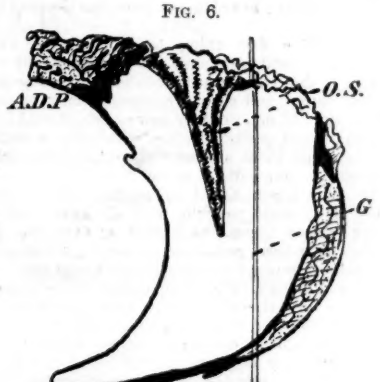
FIG. 4.

Left internal semilunar cartilage. A, Anterior end. S.P., Split portion. O.R., Old rupture. P.C., Posterior cut end.

FIG. 5.

Left internal semilunar cartilage. A, Anterior end. A.D.P., Anterior detached portion. T.I., Thickened inner edge. P., Posterior end

FIG. 6.



Right internal semilunar cartilage. Under surface. A.D.P., Anterior detached portion. O.S., Healed old scar. G, Glass rod.

through the large incision I employed till the joint was fully flexed and the cartilage was forcibly drawn forward. The chief point I want to make is that the cartilage is loose because it is fractured and that this has considerable practical importance. This accident is a common one in miners who work largely with their knees flexed and in awkward positions and usually follows a twist of the flexed knee. Of 100 cases in 98 the internal and in two the external semilunar cartilage are fractured. The injury is attended by very severe pain, sometimes sufficiently serious to cause the strongest man to drop as if he had been shot, and is followed by inability to extend the joint fully and swelling of it. Beyond this history, a twist of the knee followed by a sickening pain and two physical signs: (1) inability to extend the joint fully, and (2) swelling of the joint by fluid in it, seldom anything further is discovered.

In the majority of cases additional testimony is offered to the effect that reduction of the displacement with immediate relief had been brought about after certain movements, such as free flexion, with perhaps external rotation and quick extension, but that some trifling twist at a later date reproduced the symptoms and signs, and that each recurrence seemed to make the next more easy. In the early stages, at least, except when the cartilage is displaced, the joint feels quite well, but later the joint becomes creaky and in a fair percentage of cases osteo-arthritic changes follow and gradually increase till the leg becomes seriously incapacitated. In rare cases a natural cure follows many "attacks." This is probably brought about by fraying out the detached portion till it is destroyed. There appears to be little difference in the liability of the joints to this accident; what there is shows a slight preference for the right, for in my 75 cases 37 were right-sided (36 internal and 1 external), 30 were left-sided (29 internal and 1 external), 2 were both knees, and in 6 no record was made. In 89 cases during the same period from my wards 43 were right-sided, 33 were left-sided, 2 were both knees, and in 11 no record was made.

Diagnosis.—Palpation of the joint rarely, but very rarely, discovers a portion of cartilage moving more freely than normal at the side of the joint affected. Always when the inner side is involved pressure on the anterior edge of the internal lateral ligament elicits tenderness, but this is not a typical sign as it occurs whenever anything inflammatory has occurred in the joint, and is as certainly found as is McBurney's point in appendicitis. The diagnosis is based upon the history of injury, the locking of the joint against full extension and swelling of the joint following the attack. The only conditions it can be confounded with are those in which a solid resisting body falls between the articular surfaces of the femur and tibia and these are to be found in loose cartilages or attached pedunculated cartilaginous growths. So far as I have observed in these cases the patient has always discovered for himself the cause of the trouble and is willing to find and can usually demonstrate it, a thing it is well to let him do. He may experience considerable difficulty in discovering the offender but the surgeon has still more, and when he thinks he has got it the lump may easily slip back into one of the recesses of the joint and disappear, hence the appropriate German name of joint mouse.

Treatment.—The first thing to be done is to move the displaced cartilage from its false position as soon as possible if this can be accomplished. Flexing the joint to the full extent and then extending it may produce the desired result. If not rotatory movements should be made, in the fully flexed position before extension is performed. If this also fails these attempts should be repeated under an anæsthetic. Immediate relief follows the reduction which is often accompanied by a snap, full extension of the knee is at once possible, and all feeling of tension previously present leaves the hamstring muscles. All the stories that have been published as to the value of this or that special manœuvre for reduction are based upon a wrong pathology and no particular manipulation is likely to succeed if the simple ones described fail. If reduction is successfully accomplished, and this is to be known by the facts that complete and painless extension can be effected, the knee should be fixed by effective splints. For this purpose I prefer two lateral poroplastic splints, strengthened by an iron rib extending from the perineum to the sole of the foot on the inside, and from the trochanter to the sole of the foot on the outside, and fixed with straps or bandages. These are to be worn for six weeks, and with these and a patten on the foot of the sound side and crutches it is allowable for the patient to take exercise. The object of this prolonged rest is to allow of repair of the fractured cartilage, and some of our specimens show that this can be satisfactorily accomplished. For six months at least violent exercise should be avoided and the patient should learn to walk with the foot straight, or, better still, with the toes slightly inverted. Displacement of the inner cartilage requires that the toes should be everted and a slight injury in this position will reproduce it. For the same reason bicycling is a good exercise because in pedalling the foot is kept straight. If the displacement cannot be reduced the cartilage may either be excised or the knee may be left to see if spontaneous righting occurs, as it not infrequently does. Till painless full extension can be performed splints are of no use and probably diminish the chance of replacement. If the displacement recurs, and especially if it does so after slight provocation, a radical cure is unlikely to follow any measure but excision of the cartilage. A variety of knee supports and trusses have been invented and if the patient prefers the wearing of such a support to the risks of an operation a suitable one can be obtained. For a man whose livelihood depends on his physical capacity and activity such an apparatus is useless—the only thing for him is to face the operation. The danger of this must not be minimised; the operation is many times more serious than any of the ordinary abdominal operations. Surgeons do not, as a rule, publish their misfortunes, but I know of calamities, loss of life, loss of the limb, suppuration of the joint with all its attendant and succeeding horrors, that have happened to skilful and careful surgeons. This has made me cautious in abandoning methods which have stood the test of time, and in addition to the use of sterile gloves, instruments, towels, and dressings I interfere as little with the joint surfaces as possible, rarely using anything but instruments in the joint, using strong antiseptics (1 to 1000 corrosive lotion or 1 in 20 carbolic lotion) for everything not in actual contact with the wound, and weak antiseptics (1 in 10,000) as a final washing for everything else. Surgeons now realise that scientific asepsis of a wound with our present methods is an impossibility, and in advocating antiseptics it consoles me to remember that a small quantity of antiseptic introduced into a culture medium along with an organism is likely to interfere with its growth, and that even such a feeble antiseptic as boric acid will in infinitesimal quantity delay fermentative changes in milk. Notwithstanding every precaution a large percentage of cases in which the knee-joint has been opened offer evidence of *some* sepsis. They have severe pain, some rise in temperature, local and general, swelling of the joint, an enlargement of the saphenous glands, and some of them show the red streaks of infected lymphatics. Some ingenious surgical friends suggest that this is due to the irritation of antiseptics, but that is not—considering the very small amount that can get into the wound and the weakness of it and our

FIG. 7.

Incision for operation (1).

past experience with strong antiseptics in wounds—my own view. The skin over the joint is prepared the night before operation in the usual manner, and again on the table with corrosive lotion once previous to operation.

Operation.—A tourniquet of broad strong indiarubber bandage is applied high on the thigh. After numerous trials without and with the tourniquet I have concluded in favour of this. The knee is flexed and an incision made, as in Fig. 7, through the skin only. The knife with which this incision was made is now rejected as unfit for further use and with a clean knife an incision is made through the extensor aponeurosis from the upper part of the skin incision straight over the head of the tibia. In simple straightforward cases this incision suffices; in more difficult ones the incision is curved backwards over the inner part of the head of the tibia, but must never divide the ligamentous structures[2] on the inner side of the joint beyond the skin incision. A free division of the ligaments here frequently results in a joint capable of some lateral movement, and consequently of a limb incapacitated for any sort of work, a fact which has only been impressed upon me since I have had to examine many miners for the compensation authorities. On dividing the strong extensor aponeurosis a thick pad of tough fat is exposed. This can be drawn forwards between two clip forceps and divided in the line of the previous incision until the joint is opened at some depth. As soon as air gains admission to the synovial cavity the incision can be readily extended to the whole length of the preceding one. With suitable retractors the joint cavity can now be examined, and a blunt hook under the free edge of the cartilage shows whether it is unduly loose and aids the search. If the incision is found to be too small it is extended backwards along the head of the tibia in the joint. Through this incision the joint can be fully explored during first full flexion and then full extension, and if no lesion of the cartilage is discovered further search must be made for the cause of offence. If the cartilage is at fault the crack in it will already have been discovered and the cartilage is to be removed. My general plan is to divide its anterior attachment first; then, holding this in clip forceps, separate it by cutting the coronary attachment back beyond the middle line; then, dividing the cartilage transversely, remove its anterior two-thirds. More than this is not necessary and adds to the difficulties and dangers of the operation. After removal of the cartilage the wound is closed first by a continuous suture of catgut through the extensor aponeurosis, then by a continuous catgut suture fortified by a few interrupted silkworm-gut sutures through the skin. Separate closure of the synovial membrane is unnecessary. In a single case, that of a youth with displaced external semilunar cartilage, on whom I had operated, a small hernia on the outer side of the joint followed the operation. He had used the joint as soon as the wound healed and this may have had to do with the result, but it troubled him so little that he was unaware of its presence till I pointed it out. The wound is dressed with gauze wrung out of 1 in 1000 corrosive spirit lotion, abundant cotton-wool, and a firm bandage. When the dressing is completed, but not till then, the tourniquet is removed whilst the limb is elevated and kept so for a few minutes. Latterly I have discarded all splints and allowed the patient to put the limb in any position he chose. Earlier I kept the knee entirely at rest in efficient splints for an average of three weeks after operation. Now one dressing remains on for three weeks instead. It was somewhat of a surprise to me to find in response to our inquiry that the splinted cases were rather better than those treated without splints. The numbers are, of course, too few (given below) and the figures too close to draw any conclusion from and consideration of the fact that individuality, and perhaps compensation in many cases, prolongs the period of abstinence from work after operation has to be taken into account.

After progress.—For a varying time after operation the joint remains weak and occasionally painful when worked, but these symptoms gradually disappear, and after the first year it is the rule for patients to say that the knee is as good as ever it was, and the cases we have inspected, numbering 20 unselected, bear this out fully. We have endeavoured to obtain the after-history of every case operated upon from 1900 to the end of 1907, not including the last year as these are too recent to form a judgment upon.

Of 58 cases done, 17 cannot be traced; of the 41 returns, 3 cannot work and 38 report themselves able to work. The three cases that are unable to work have been seen and all had extensive osteo-arthritis in the knee-joint, two having had it well marked previous to the operation.

All 38 successful cases were written to and 30 of these replied.

Patients sent out with Splints.

J. S.,	aged	58	years, began work	4	weeks	after operation.
W. H.,	,,	35	,, ,,	16	,,	,,
A. B.,	,,	22	,, ,,	16	,,	,,
G. C.,	,,	41	,, ,,	10	,,	,,
J. N.,	,,	30	,, ,,	5	,,	,,
W. C.,	,,	37	,, ,,	14	,,	,,
G. H.,	,,	46	,, ,,	10	,,	,,
J. M.,	,,	44	,, ,,	17	,,	,,

Patients sent out without Splints.

W. C.,	aged	35	years, began work	24	weeks	after operation.
A. T.,	,,	31	,, ,,	28	,,	,,
J. M.,	,,	39	,, ,,	7	,,	,,
G. T.,	,,	58	,, ,,	12	,,	,,
G. W.,	,,	39	,, ,,	20	,,	,,
W. C.,	,,	40	,, ,,	13	,,	,,
J. McC.,	,,	25	,, ,,	7	,,	,,
B. C.,	,,	51	,, ,,	11	,,	,,
M. S.,	,,	27	,, ,,	6	,,	,,
J. P.,	,,	52	,, ,,	11	,,	,,
J. C.,	,,	32	,, ,,	13	,,	,,
G. P.,	,,	46	,, ,,	14	,,	,,
H. H.,	,,	20	,, ,,	5	,,	,,
J. M.,	,,	39	,, ,,	12	,,	,,
J. D.,	,,	30	,, ,,	12	,,	,,
W. O.,	,,	38	,, ,,	24	,,	,,
W. S.,	,,	36	,, ,,	4	,,	,,
M. P.,	,,	22	,, ,,	16	,,	,,
W. R.,	,,	35	,, ,,	7	,,	,,
J. P.,	,,	39	,, ,,	6	,,	,,
R. A.,	,,	28	,, ,,	16	,,	,,
R. G.,	,,	39	,, ,,	20	,,	,,

The average time before work was commenced by the patients who wore splints is 11 weeks. Those who wore no splints averaged 12½ weeks.

In connexion with osteo-arthritis it was noted at the operation of several cases that there were thickened hyperæmic synovial membrane, synovial fringes, and some erosion of the cartilages covering the femur or tibia or both. In three of these the disease was arrested by the operation, and the movements of the joints are perfect. In no single case that we can find was the joint made worse, and no patient was seriously ill after the operation.

For the notes and records of these cases I am indebted to my late house surgeon, Dr. Hamilton Drummond.

Newcastle-on-Tyne.

[2] I purposely avoid saying internal lateral ligament, for this artificial structure depends on the skilled dissection of the anatomist. All the aponeurotic structures are so welded with the ligaments as to be inseparable.

PANCREATIC SECRETION IN THE TREATMENT OF DIABETES.

BY W. M. CROFTON, M.B., B.CH. R.U.I.

BEFORE describing the case and the treatment adopted I will briefly consider the premises upon which the latter was founded, recapitulating well-known facts so as to make what follows the clearer.

The physiology of the carbohydrates, &c.—The saliva converts boiled starch and cane sugar into maltose and dextrin. A small amount of inversion also takes place in the stomach. The amylolytic ferment of the pancreas, amylopsin, is the chief agent in this inversion. The maltose and dextrin are then converted into dextrose by a ferment in the intestinal juice, the cells lining the intestine have the same power, and there is also a ferment with a similar function in the blood and tissue juices. The dextrose which is absorbed by the intestinal mucosa is passed into the portal vein which conveys it to the liver cells; these store up a certain amount of it, converting it into glycogen, while the rest passes on to supply the carbohydrate needs of the various tissues; these also have in a more or less degree the power of converting dextrose into glycogen, forming local

reserve stores. It appears that the fate of the liver glycogen may be twofold: (*a*) when there is an extra demand for potential energy during a fasting period this glycogen is reconverted into dextrose and is burnt up in the conversion of potential into kinetic energy, for instance, in the muscles; while (*b*) if there is no demand in the intervals between meals some of the glycogen is converted into fat. The liver cells have the glycogen-forming power in a superlative degree, the liver forming the great carbohydrate reserve store, doling out more or less dextrose according to the needs of the tissues and in such quantities that normally there is not more than 0·2 per cent. in the blood. The glycogen formed in the liver and tissue cells may also be built up by them from certain of the products of protein metabolism—e.g., alanine and aspartic acid, these being probably first converted into lactic acid from which glycogen is elaborated.

In breaking down the dextrose the tissue cells probably first convert it into lactic acid (this is known to take place in the liver); this is then further oxidised into water and CO_2. In the absence of the pancreas the cells are incapable of performing this reduction; even a small piece of the pancreas preserves this capacity to them. Fat may also be converted into carbohydrate, especially in the liver, but the precise way in which this change is effected is not properly known. The pancreas is induced to secrete by a substance termed secretin, which is carried to it by the blood stream; it is formed in the mucous membrane of the duodenum and upper part of the small intestine from a precursor called prosecretin under the influence of the acid gastric contents when they enter this part of the intestine.

Pathology.—The blood normally contains up to 0·2 per cent. of dextrose. If this percentage rises higher the kidney cells remove it and it is excreted in the urine. This may happen as follows: (*a*) If owing to a very large intake of carbohydrate the liver and tissue cells have more than they want for their immediate needs and more than they can store up in the form of glycogen; the kidneys remove the superfluous dextrose. (*b*) If the liver and tissue cells, especially the liver cells, are not in good form as regards their glycogen-storing functions the same reserve store cannot be formed and so the temporarily superfluous amount of dextrose is removed as before. These two forms of glycosuria can be successfully treated by limitation of diet. (*c*) Glycosuria may be caused by lesions in the region of the medulla similar to glycosuria caused by puncture of the floor of the fourth ventricle between the auditory and vagus nuclei. Puncture glycosuria only lasts as long as the liver contains glycogen and does not occur if the vagi have been previously cut. (*d*) The administration of certain drugs, e.g., phloridzin or phloretin, causes glycosuria. These act through the kidney cells reducing the percentage of dextrose in the blood; the liver depletes itself of glycogen to replace the loss and when all the reserve store of carbohydrates is used up, the sugar is formed from protein material. In this last respect the phloridzin glycosuria resembles the glycosuria which occurs in severe diabetes. Adrenalin also causes glycosuria. (*e*) As mentioned above, in the absence of the pancreas the tissue cells are incapable of making use of—i.e., oxidising—the dextrose supplied to them (although they, e.g., the liver cells, may be still capable of forming glycogen); this leads to an increase of the dextrose in the blood and so to glycosuria. This form of glycosuria is identical with the glycosuria of severe diabetes and is accompanied by an increased nitrogenous metabolism, the tissue cells in their craving for dextrose manufacturing it from protein, and it appears that the dextrose so manufactured can be made more use of by the cells of the diabetic than that made from carbohydrates; and further, that made from the products of their own metabolism is more to their liking than that made from the products of foreign protein introduced into the alimentary canal.

From the above considerations it appears most probable that severe glycosuria—that is, glycosuria produced from both carbohydrates and proteins—is in some way or other due to failure in the pancreatic functions possibly of an internal secretion. This failure may come about in several ways. (*a*) The chyme entering the duodenum, &c., might not be acid enough to change the prosecretin into secretin. (*b*) It may be due to the absence of secretin from the intestinal mucosa. (*c*) It may be due to the loss of function of the cells producing the internal secretion—that is, to disease of the pancreas. The pancreas has been found to be diseased in a large number of cases—e.g., intralobular and interacinar fibrosis and degeneration of the cells of the islets of Langerhans. In treating a case of diabetes our first desire must therefore be to remove the cause of the disability of the pancreas. If it be due to the deficient acidity of the gastric juice leading to deficient conversion of prosecretin into secretin administer acids. (It is possible that some of the cases of transient glycosuria may be due to this cause.) If it be due to absence of prosecretin give secretin. Some cases of diabetes have been cured by this means. This is interesting as it shows that the internal secretion is, like the external secretions, dependent for its production on this substance.

The causes of the lesion in the pancreas itself are obscure and there are probably several. I believe that, as Sir A. E. Wright suggests, the pancreatic lesion may be due in some cases to an acute or subacute microbial inflammation which may subside and leave behind a greater or less degree of fibrosis. In order to treat this the ideal means would be a specific serum for the acute cases or a vaccine for the more chronic ones. Since this is impossible, owing to our ignorance of the causative microbe, perhaps the intravenous or intramuscular injection of some powerful bactericide, such as a solution of iodoform in ether, might prove useful. Many cases of diabetes have followed acute inflammation of the gland from different causes—e.g., it may be due to bile getting into the pancreatic duct or the diabetes may be due to a slow fibrosis spreading from the intralobular and interacinar tissues, due to a chronic inflammation following blocking of the pancreatic duct by a stone. Or the diabetes may be due to the poisoning of the pancreatic cells by a toxin produced in other parts of the body—e.g., the removal of a gangrenous limb has led to the disappearance or a great improvement in the amount of sugar.

Since it is difficult with our present knowledge to remove the cause of the pancreatic lesion, the next best thing is to replace the secretion and so to tide over an acute lesion till the pancreas has more or less recovered its function, or in the permanent sclerotic cases permanently to replace it, just as thyroid extract is given in cases where there is loss of function in the thyroid. This apparently has never, as far as I can learn from a perusal of the literature, been successful, probably because the pancreatic extract has been given by the mouth without anything to protect it from the hydrochloric acid of the stomach, so that it has been destroyed there, and has thus been necessarily ineffective, or the extracts used may have been deficient in internal secretion. In the following case an extract containing all the pancreatic products (it being impossible to give the internal secretion by itself as it has not been isolated) has been given in capsules insoluble in the stomach and when the acute symptoms subsided secretin has been given to try to stimulate the damaged pancreas to do better work.

History and condition on examination.—The patient, a girl, aged 13 years, was brought to me by her mother on Jan. 10th, 1908, who informed me that for about three months she had noticed that the child had a ravenous appetite and was passing large quantities of urine, so much so that the child was soaking her bed at night to such an extent that the water dripped down on the floor and came through to the ceiling of the room below. The patient had also been complaining of headache and of a pain in the epigastrium, and the mother had noticed that the child was very blue and drowsy and that she had no energy. The patient looked emaciated, drowsy, and somewhat cyanosed, and complained of headache and the epigastric pain, &c., as described above. The urine gave a well-marked dextrose reaction. I kept her under observation for a day or two without treatment and found that she was passing 12 pints of urine that could be collected, besides soaking her bed to the before-mentioned extent; 15 pints in the 24 hours must be a low estimate of the total amount. This contained 10·5 per cent. of dextrose and had a specific gravity of 1027. There was no albumin and none of the ketones were present. The patient's weight was 4 stones 6 pounds. The fermented urine gave Cammidge's reaction A.

Treatment was begun on Jan. 12th, when four capsules containing the pancreatic product (Fairchild's holadin) were given. No alteration whatever was made in the diet. The effect was remarkable; the amount of urine began to decrease daily. On the 14th the amount of urine for the previous 24 hours was 10 pints and the patient had not

wetted her bed nearly so much and she was brighter. On the 16th the urine was nine pints in amount and the bed was not wet at all. Dextrose, 10·2 per cent. On the 20th the amount of urine had fallen to eight pints with 11 per cent. dextrose, and the patient weighed 4 stones 12 pounds. On the 23rd the amount of urine had fallen to six pints with 10 per cent. dextrose. On the 27th the patient was given eight capsules in the day instead of four; this slightly increased the quantity of urine passed but not the percentage of sugar, this varying between 10 and 12 per cent. and her weight being maintained at about 4 stones 12 pounds, so that on the 31st the four capsules as originally given were resumed. On Feb. 12th, 13th, and 14th the amount of urine was 4½ pints. The patient did not wet the bed and she was much brighter and her thirst and hunger were much less. On the 16th she had a slight relapse, the amount of urine rising to 10½ pints on the 17th. This was accompanied by a sore throat, epigastric pain, headache, and drowsiness. On the 26th the amount of urine had again fallen to six pints and the patient's weight was 4 stones 13 pounds. From the 29th to March 10th no capsules were given and the weight of the patient on the latter date was 4 stones 12 pounds, the amount of urine being 6 pints with 11 per cent. of sugar. As the amount of urine then began to rise the patient was put on to the original number of capsules. The case and the treatment pursued much the same course, the capsules being intermitted now and then for a week or ten days until August 6th. On that day she passed 5½ pints of urine containing 10 per cent. of sugar, and she weighed 4 stones 12 pounds. Thinking that the pancreas had probably then recovered sufficiently to stand an additional stimulus I administered a one-grain tablet of secretin three times a day after food instead of the capsules. This effected a reduction of both the percentage of sugar and the quantity of urine; on the 25th the former was 5·5 per cent., the latter three pints, and the patient's weight was 4 stones 13½ pounds. On the 27th, much to my disappointment, the patient relapsed with a sore throat and epigastric pain; the secretin was stopped and she was put back on the pancreatic extract. The urine increased daily till on Sept. 22nd it reached its maximum amount of 12 pints. It was remarkable that after the first few days of her relapse, when her weight fell 3 pounds to 4 stones 10 pounds, there was no further loss of weight, indeed there was a slight increase, it being 4 stones 10½ pounds on Sept. 22nd. From that date the urine gradually decreased in amount until on the 29th it was three pints and contained 11 per cent. of dextrose, the patient's weight being 4 stones 11 pounds. The capsules were then stopped and the secretin was resumed for ten days. The urine on Oct. 6th was three and a half pints and the child weighed 4 stones 12½ pounds, she had no abnormal thirst or appetite and she felt quite strong. On Nov. 9th the child still weighed 4 stones 12½ pounds and the amount of urine was normal—namely, two and a half pints—and it contained 6·2 per cent. of sugar. She had then had no treatment for weeks. On the 10th I again started her on secretin in the hope of still further reducing the percentage of sugar. The amount of urine remained from two and a half to three pints daily with 5 per cent. of sugar till Jan. 11th, 1909, when there was a slight relapse accompanied by a sore throat as before. The patient was therefore put back on the capsules and she gained 3 pounds in weight during the relapse. She now (Feb. 22nd) weighs 5 stones 2 pounds and is in excellent form.

The above case could not well have been a worse one even for a child, and it formed a very severe test for any treatment; this was increased by the fact that, except for a few weeks when she was given a larger quantity of potatoes than bread, no alteration of diet was made, I told her to eat and drink anything she liked. The slight change in diet had no effect on the quantity of urine or the percentage of sugar. The relapses, accompanied as they were by sore throat and epigastric pain, were very suggestive of a microbial inflammation of the gland; they also demonstrate the effect of the capsules in stopping loss of weight and maintaining the patient's strength during the acute phase. Another interesting point, and one at present inexplicable to me, is the fact that although the amount of urine fell under the influence of the pancreatic extract the percentage of sugar remained the same although the patient was passing a far less total quantity; and that the percentage fell when the pancreas received the additional stimulus of the secretin. Whether or not the patient will entirely lose the sugar in her urine depends on whether the gland entirely recovers. I very much regret that I have missed getting a swab of the child's throat during one of the relapses for microbial investigation. I hope if I have another case with similar symptoms to try to attack the supposed microbes in one of the ways suggested above.

The embryological work of J. Beard has thrown some light on the change that takes place in the nutrition of the fœtus when the pancreas becomes functional. In order properly to realise its influence it is necessary to inquire into the condition of the fœtus as regards its nutrition before the pancreas becomes functional—that is, before the "critical period," that time when all the fœtal organs are laid down and the pancreas and placenta become functional. Owing to the asymmetry of the nitrogen and carbon atoms isomeric compounds of them can be built up in two directions. These isomeric compounds act differently with regard to polarised light, turning it to the right or left as the case may be. After fertilisation the egg begins to divide, forming first of all the trophoblast or chorion which is the representative of the asexual generation and is called the phorozoon by J. Beard. From the first division, however, there is one cell which in succeeding divisions is different to the rest, this is destined to form later the germ cells and sexual generation—i.e., the fœtus which unfolds on and flourishes at the expense of the trophoblast or asexual generation. The isomeric compounds on which these two generations live are different: the asexual lives on levorotatory glucose, levo-glycogen, and dextro-proteid; the sexual lives on dextro sugar, dextro-glycogen, and levo-proteid. The cells of the trophoblast by means of their intracellular ferments burrow into the uterine wall, breaking up the levo-proteids and dextro-glycogen and dextrose and building them up into the isomeric dextro-proteid and levo-glycogen and levo-sugar. The sexual generation, on the other hand, also by means of intracellular ferments, takes these and builds them up into the levo-proteid and dextro-sugars. When the placenta and pancreas become functional there is a change in the mode of nutrition of the cells of the fœtus; instead of preparing their own food by means of their intracellular ferments they have their food prepared for them by the extracellular ferments of the pancreas; their food is no longer the dextro-proteid and levo-sugars but levo-proteid and dextro-sugars. How the pancreas effects this change is obscure. It cannot be due to its external secretions, for in diabetes these are generally sufficient; it must be due to some substance absorbed into the blood, that is, to an internal secretion of some kind. It is, therefore, easy to realise the profound change that takes place when the pancreas loses its function; in the absence of the internal secretion the tissue cells again become dependent on their own intracellular ferments as they were in the pre-critical period when they lived on levo-sugars (this is a possible explanation of the observation that levulose is better borne by diabetics than dextrose), and thus the dextro-sugar with which they are supplied cannot be used, the percentage of dextrose in the blood rises, and it is excreted by the kidneys.

It will be noticed that the trophoblast cells are bathed by the alkaline maternal tissue juices while the pre-critical fœtal cells have to absorb their food from the acid juices of the trophoblast tissues. This may suggest an explanation of the acidosis of the diabetic.

I have not speculated on the effect the loss of function of the pancreas may have on proteid metabolism; it is probably profound. It is possible that its power of changing proteid metabolism may be affected when that of changing carbohydrate metabolism is not and *vice versâ*, or they may both be affected together, which may explain the worst cases of diabetes.

Sutton Bridge, Wisbech.

CLINICAL SOCIETY OF MANCHESTER.—A meeting of the above society was held on Feb. 16th, Dr. J. J. Cox, the President, being in the chair. Dr. C. Christopher Heywood opened a discussion on Whooping-cough. In the course of his remarks he laid great stress on the value of fresh air in the treatment of this disease and expressed the opinion that but little reliance was to be placed on drugs.

A CASE OF HEPATIC ABSCESS (?) TREATED BY A VACCINE; RECOVERY.

BY J. H. E. BROCK, M.D. LOND., F.R.C.S. ENG.,
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THE patient was a single man, aged 37 years. A grandfather, an uncle, two aunts, and a brother and sister had died from tuberculosis. In the beginning of May, 1906, while living in Bombay, he had an attack of dysentery. On May 26th, 1906, he sailed for England, arriving in London on June 10th. Two days after leaving India he developed appendicitis. On June 12th Sir Patrick Manson was consulted, and by him the patient was sent into a nursing home on the following day. On the 20th the patient was operated on, a large abscess and a gangrenous appendix being found. On the 26th the wound had to be opened up again and a further operation performed. It was at one time feared that a third operation would be necessary, but happily this was avoided. The abdominal wound healed by granulation, and a tendency to ventral hernia from a weak scar resulted. The patient left the nursing home on July 30th and continued to gain strength and enjoy fairly good health until the following November, when he was again down with an illness which was named "acute gastritis." This attack lasted a month and so reduced his strength that he was advised to go away early in January, 1907, to Adelboden in the Bernese Oberland. While in Switzerland the patient had another "slight attack of gastritis," in which he was told that *his liver, right lung, and kidney were affected.* I would direct special attention to these illnesses after the appendicitis operations, and particularly to the statement that his liver, right lung, and kidney were affected in the second attack of "gastritis," as I believe them to be of importance in the interpretation of the sequel. The patient returned to London in February, 1907, but being unfit to resume his duties in Bombay applied for an extension of leave and was granted a month. On March 15th he sailed for India and arrived on the 29th of the same month to find the hot season one of unusual severity. On April 29th he had a "touch of fever" and kept his bed for a week, after which he got up and went about as usual till May 15th, when he took to his bed again with "low fever." From this date till June 26th he had constant fever, rigors, and vomiting, when an abscess burst into his lung and he coughed up an immense quantity of pus, blood, and anchovy-paste-like expectoration. The patient remained in India till July 20th, during which time he continued to cough up a large amount daily of similar matter. On that day he embarked for England, arriving in London on August 11th. His sufferings on board were frightful and I have no doubt from his description of himself at nights that he must have had a high temperature and been delirious. To add to his miseries he developed an attack of colitis while at sea and was tortured by tenesmus, acute abdominal pains, and incessant calls to evacuate the bowels. For the first two days after his arrival in London the patient refused to see a medical man, as he was afraid his case would be diagnosed and treated as one of phthisis on account of the nature of the material that was being expectorated. Fortunately, however, he secured the services of a skilled nurse, by whom he is described as looking very ill and emaciated, so that "all his bones appeared to be coming through the skin"; the pulse was very quick, the pupils were dilated, and the cough was very troublesome. On August 13th, being myself out of town, the patient was seen by my colleague, Dr. F. Kay Holman, and on the 15th by Dr. W. Hale White in consultation. Dr. Hale White considered the case one of hepatic abscess, situated probably in the right lobe of the liver which had perforated into the base of the right lung. I returned to London on the 22nd and took charge of the patient. The report concerning him up to this date was that his cough was incessant and accompanied by the expectoration of blood-stained sputum, amounting at first to three pints per diem—an amount which gradually diminished—till on the 22nd he brought up only eight ounces; that he was troubled by a constant desire to evacuate his bowels but passed in most of his efforts mucus but no blood; and that he suffered a good deal from abdominal pains and very great thirst. His nights were very restless and he was drenched with such profuse perspirations that his sleeping suits had to be changed two or three times during the day. His pulse-rate varied from 110 to 120 per minute, and often he became so collapsed that scarcely any beat could be felt at the wrist and strychnine and brandy were required to bring him round. The condition of the bowel gradually improved, so that on August 18th the motions were semi-formed and less offensive and by the 22nd they were quite solid, but still accompanied by a good deal of mucus. The griping abdominal pains had likewise diminished and the patient did not so frequently call for opium for their relief.

The following was the state of the patient on August 22nd. He was an extremely emaciated, prematurely aged looking man with an alert and restless expression. He could lie in bed with comfort either on his back or right side, but turning on the left side provoked a paroxysm of coughing. He had a constant tickling cough and any attempt to speak brought on a more severe paroxysm with expectoration of blood-stained material. His temperature was 100° F. The mucous membranes were anæmic. There were no enlarged glands. The bones and joints were normal. The apex beat of the heart was in the normal position. There was no increase of cardiac dulness. The sounds were normal at the apex and the base and were unaccompanied by murmurs. The pulse was 120, small, regular, and compressible. The following was the state of the lungs. Fronts: Movements were equal on the two sides. On the right side pulmonary resonance extended down to the sixth rib in the nipple line. The breath sounds were normal; there were no adventitious sounds. Backs: The left side was normal. On the right, below the inferior angle of the scapula to the base, the percussion note was not quite so resonant as on the left side and the breath sounds over this area were somewhat weaker than at the opposite base, but there were no adventitious sounds. The expectoration viewed in bulk resembled that of a patient with pulmonary tuberculosis suffering from a mild attack of hæmoptysis; looked at more closely it was seen to consist partly of pure blood and partly of lumps of a salmon-red tint streaked with faint white lines. It contained no yellow pus and was quite odourless. With regard to the abdomen, there was a broad scar about six inches long in the right iliac region along the outer edge of the rectus abdominis. Dulness of the liver extended from the sixth right intercostal space to the costal margin; the edge could not be felt; there was no tenderness. The spleen was not palpable. There was no tenderness or thickening over the colon and no tenderness in the flanks. The urine was normal and the nervous system was normal.

Treatment in the early stage of the illness was entirely devoted to the relief of symptoms and no attempt was made to deal with the abscess. At the consultation with Dr. Hale White on August 15th the question of operation had been put entirely out of court, both on account of the extremely exhausted state of the patient and the impossibility, from the absence of definite physical signs, of locating the abscess and therefore of guiding the surgeon in the selection of his route for getting at the seat of the mischief and providing adequate drainage. The patient was placed on a diet of six to eight pints of milk, one ounce of cream, and from four to six ounces of brandy in the 24 hours. He took nourishment well and retained it. The diarrhœa was treated with a bismuth and opium mixture, supplemented by a dose of 20 minims of tincture of opium when severe abdominal pain called for it. At night the patient took a draught of mixed bromides (25 grains) and 20 minims of solution of hydrochlorate of morphine. Occasionally another half dose of this mixture was required to procure sleep. Sweats were checked by a pil. atropin. grain 1-100th; and the incessant cough with linct. heroin. By August 24th the diarrhœa had ceased and the bismuth mixture was discontinued. The patient was now put on terebene (5 minims three times a day) and given creasote to inhale frequently. The latter was found to be a great sedative to the cough and afforded substantial relief. Until Sept. 2nd a hypodermic injection of 1-50th grain of strychnine was administered night and morning, as the pulse-rate varied from 108 to 140 per minute, and the patient was subject to frequent attacks of faintness and collapse. During bouts of coughing a mouthful of pure blood was often brought up; and on Sept. 12th he coughed up blood to the amount of four ounces. The terebene mixture was replaced

by one of quinine and strychnine on Sept. 2nd. On Sept. 5th the patient was allowed up on the couch for an hour; and the time that he was up was gradually lengthened each day. On Sept. 25th he went out in a bath chair.

On Oct. 1st Dr. Hale White again saw the patient in consultation. By this time the daily expectoration had dwindled to about three or four ounces and was often much less and of a very pale salmon-pink colour. The patient had gained flesh considerably and was able to go out either in a bath chair or victoria every day. No change had occurred in the physical signs; the temperature was normal night and morning; the sweats had almost disappeared; the appetite was good and ordinary food was being taken. Dr. Hale White advised the patient to go to Mullion in Cornwall. On Oct. 4th the patient had another hæmorrhage and coughed up five ounces of blood in a rush, and later in the same day three ounces more of blood came up. On the 5th there was pulmonary hæmorrhage again to the extent of five ounces. These attacks were treated with ice to suck, chloride of calcium internally (10 grains three times a day), and turpentine inhalations, handkerchiefs soaked in turpentine being also hung at the head and foot of his bed. On the 9th the patient went to Mullion and stood the railway journey and drive of eight miles at the other end very well. On the 10th there was pulmonary hæmorrhage to the extent of six ounces; on the 11th five ounces more of blood were coughed up. On the 22nd the expectoration had practically ceased and nothing more was brought up till the 31st and Nov. 1st, when a little more blood was coughed up. On Nov. 11th the patient went to Falmouth and on the 20th complained of sickness and constipation and had to consult a medical man. On the 22nd and 30th pulmonary hæmorrhage occurred. On Dec. 10th the patient moved on to Torquay and on the 13th, 14th, and 27th he again had hæmoptysis to the extent of three or four ounces each day. On Jan. 3rd, 1908, I went down to Torquay to see the patient and was amazed to see the change in his general condition. He now scaled over 12 stones and had a look of ruddy health. He still coughed and expectorated about three ounces of blood-stained sputum in the 24 hours. As regards the physical signs, the only change to record was that between the inferior angle of the right scapula and base of the lung there was a distinct flattening of the ribs. The patient now expressed a wish to go on to Exmouth and this was agreed to. At first he appeared improved by the change, but after a residence of about ten days at Exmouth he found that going out of doors brought on spitting of blood. On Jan. 21st he brought up two ounces of blood and on the 22nd he had a severe bout of hæmoptysis, losing eight ounces first and later three ounces more. After this attack he regularly coughed up from two to three ounces of blood per diem until Feb. 5th when he brought up six ounces, and on Feb. 6th he lost seven ounces of blood. On the latter day the patient left Exmouth and came up to town. I saw him on Feb. 7th and found that for the 24 hours preceding my visit he had coughed up 17 ounces of blood-stained sputum. The frequent recurrence of hæmorrhage and the great increase in the amount of expectoration suggested either that the hepatic abscess had entered on a period of renewed activity and was making fresh inroads into the liver substance and opening up portal vessels in its progress; or looking to the strong tuberculous history in the patient's family that he had possibly got tuberculous infection at the base of the right lung grafted on to the original trouble. I therefore procured a specimen of fresh sputum and submitted the following three questions for answer to the Clinical Research Association: 1. Did the sputum show evidence of a destructive process in the liver in the shape of liver cells or bile? 2. Did it contain tubercle bacilli? 3. Was the amœba coli present? I append the pathological report to these three queries. "This sputum consists largely of blood and blood clot, but there is also a little elastic tissue present showing the characteristic alveolar arrangement of lung. No liver substance is seen and the specimen does not give a bile reaction. Tubercle bacilli are not found but there are many Gram-negative rods, associated with a few streptococci and staphylococci. We are making further cultural examinations of these organisms. After hæmoptysis ceases it would be advisable to send another specimen so that we may examine again for tubercle bacilli or organisms from lung abscess. The amœba coli cannot be detected in specimens after they become cold." Further report: "The rods present in the sputum are seen to be bacilli of the proteus type and not coli-like rods such as are sometimes associated with the amœba coli in tropical abscess."

On Feb. 8th, 1908, the patient was again seen in consultation with Dr. Hale White. His temperature was 99·6° and his weight was 12 stones. As regards physical signs it was noted that the liver dulness began at the sixth right rib and extended down to the margin of the ribs. The liver edge could not be felt and there was no tenderness on deep pressure. Posteriorly, below the inferior angle of the right scapula, the resonance was impaired and there was also a distinct recession of the ribs. Over this area breath sounds were weak. Dr. Hale White again negatived an operation and suggested that Dr. J. W. H. Eyre should make an examination of the sputum and if possible prepare from it a vaccine of the organism which he considered was responsible for the hæmorrhage and with which the patient should be inoculated. Dr. Eyre reported that "from the expectoration a particular streptococcus was isolated, whilst an examination of the blood showed that the patient's resisting power to this particular organism was practically non-existent, although quite normal with respect to numerous other pathogenic bacteria, including the bacillus of epidemic dysentery." In all examinations of the sputum subsequently this streptococcus was invariably present and from it the vaccine was prepared. On Feb. 10th the patient went to Worthing and bore the journey well. The same night he coughed up ten ounces of blood and on the following day nine ounces more. This was the last serious hæmorrhage that occurred. On Feb. 15th I went to Worthing and injected a dose of 5,000,000 streptococci into the left flank according to Dr. Eyre's directions. On the morning of Feb. 16th the temperature dropped to 97·6°, but in the evening rose to 99·8°. On Feb. 17th the morning temperature was 97·8° and the evening temperature 100·4°. On the 18th and 19th it was normal. The nurse reported on the 17th that since the injection the nights had been restless, the patient sleeping only in dozes; cough had been less, only seven ounces being expectorated in 24 hours, all of a pale salmon colour; hæmorrhage had ceased.

On Feb. 19th the second injection of 50,000,000 cocci was administered. On the morning of the 20th the temperature was 97·8° and in the evening 99·6°. There was no further rise of temperature till after Feb. 24th. On March 2nd the nurse reported that after the 24th the evening temperature varied between 99·4° and 100·2° and the pulse-rate from 76 to 104 per minute. On two or three occasions the patient passed offensive motions "with strings of mucus and slime." Cough was still very troublesome and the nights were bad, but there had been no return of hæmorrhage. The amount of the expectoration had not diminished, but the colour was getting paler, and on the day of writing contained "several pieces of thick yellow pus." The appetite was bad and occasionally food was vomited. On March 4th the temperature dropped to normal. On the 7th the third injection, amounting to 50,000,000 cocci, was given. The same night the temperature rose to 100·2° and on the following night reached 100°. After the 8th the temperature did not rise above normal. On the 12th the nurse reported that the amount of the expectoration was decreasing and the sputum only occasionally was coloured. The patient was able to go out in a bath chair for two hours morning and afternoon and to partake of solid food with relish. On March 24th Dr. Eyre reported that the opsonic index of the blood for the particular streptococcus with which the patient had been vaccinated worked out at 1·43. Dr. Eyre added: "Evidently we are making headway now, and I am hoping that we shall bring this to a satisfactory conclusion pretty soon if we can only keep the index up as high or higher than it is now for a time." On the 24th the patient himself wrote and declared himself in every way improved. He stated that the sputum had diminished to three or four pieces of the size of a sixpence during the 24 hours, and was practically colourless; that his colour had improved and weight was increasing; and that appetite was good and food was taken with enjoyment. At night there was still a little perspiration. On the 27th the fourth injection, amounting to 100,000,000 cocci, was given. There was no febrile reaction following this dose, and by April 3rd cough and expectoration had ceased entirely. A specimen of blood was sent to Dr. Eyre on April 3rd and he reported soon afterwards that the opsonic

index had risen to 1·77. On the 16th the blood was again examined and the opsonic index found to be 1·47. Dr. Eyre recommended one more injection to be on the safe side, although he did not think it really necessary. The last injection of 10,000,000 cocci was administered on the 22nd and after it there was no reaction. The patient came up to town in June and I had an opportunity of examining him again. The liver dulness was obtained only in the sixth and seventh right intercostal spaces; below this to the margin of the ribs the note was tympanitic. The liver had evidently been dragged up by the shrinkage of the abscess cavity.

Remarks.—There are three points of interest attaching to this case: (1) the position of the abscess; (2) its exciting cause; and (3) its treatment.

1. *The position of the abscess.*—Unfortunately, a period of two months had elapsed between the bursting of the abscess into the right lung and the patient being placed in my charge, so that I cannot say what physical signs he presented before rupture occurred. I have it from the patient, however, that he was examined by several medical men in Bombay, some of them with an extensive and expert knowledge of hepatic abscess, during the period immediately preceding the rupture. All were agreed that he was suffering from an abscess of the liver, but not one was able to locate it until its whereabouts became apparent by the discharge of pus through the right lung. He was strongly advised by all his medical attendants in India not to submit to operation, and was also confidently assured that three weeks at sea would produce a vast change for the better in his condition. As a matter of fact he arrived in London in a perfectly desperate state and almost moribund. It is obvious that there are two possible explanations of the abscess: (1) that it was a genuine tropical abscess of the liver post-dysenteric in origin and situated far back in the right lobe of the organ; and (2) that it had no relation at all to dysentery, but was a direct result of the appendicitis and was subdiaphragmatic in position. Supposing it to have originated in the appendix, the cellular tissue of the ascending mesocolon must have become infected and the infection have travelled upwards towards the upper surface of the liver. A subdiaphragmatic abscess situated on the upper and posterior surface of the liver which had pursued the track suggested would, I believe, if it followed strictly anatomical lines, lie on the bare surface of liver uncovered by peritoneum and inclosed by the anterior and posterior layers of the coronary ligament. It would not only lie in a position impossible of location by physical signs but in juxtaposition to the posterior part of the lower lobe of the right lung—that is to say, quite close to the termination of the main bronchial stem, which runs downwards, backwards, and somewhat outwards towards the base of the lung. A subdiaphragmatic abscess bursting into the lung in this position would enter it near the main bronchus and would consequently stand a good chance of being coughed up without producing much disorganisation of pulmonary tissue. In the case before us the physical signs at the right base were meagre and the lung suffered hardly at all from the passage of pus through it.

2. *The exciting cause.*—Until January, 1908, I had accepted without demur the diagnosis of tropical abscess of the liver, as every medical man had done who had seen the patient. It became apparent, however, at that time that the improvement in the symptoms was only going to be partial and that sea air and change would not effect the cure which had been hoped for. The probability of this being a subdiaphragmatic abscess following appendicitis now occurred to me, and at the same time the possibility of tuberculous infection also suggested itself as an alternative diagnosis. With a view of arriving at a conclusion a specimen of the sputum was submitted to the Clinical Research Association with three questions for answer: (1) Did the sputum show evidence of active destructive disease of the liver in the shape of liver cells and bile? (2) Did it contain tubercle bacilli? and (3) Was the amœba coli present? All three questions were answered in the negative. The organisms present were stated to be streptococci and staphylococci with many Gram-negative rods, the latter being found subsequently to be bacilli of the proteus type, and not the coli-like rods sometimes associated with tropical abscess of the liver. The absence of liver cells, bile, and amœba coli from the sputum seemed to me to afford strong presumptive evidence that we were dealing not with a hepatic abscess but with a subdiaphragmatic one on the surface of the liver, ultimately derived from the appendix. In addition to the pathological evidence in support of this view I would direct attention to the patient's history after the operation for removal of the appendix. He never regained normal health, and was constantly down with one illness or another which was variously labelled by the respective practitioners who saw him as "acute gastritis," "low fever," and a "touch of fever." Especially significant was the statement made to him by the medical man who attended him at Adelboden in January, 1907, that his liver, kidney, and right lung were affected during his supposed "slight attack of gastritis." Of course, it is open to anyone to say that the abscess which was cured by the streptococcal vaccine was only a terminal infection, and that the original liver abscess had come to an end, when the expectoration ceased in November, 1907, for three weeks. In the face of the previous history of the patient the pathological finding that the sputum contained neither liver cells nor bile, and therefore showed no evidence of destructive disease of the liver, and the successful outcome of the treatment by streptococcal vaccine, I think this view can scarcely be upheld. I had occasion in May, 1908, to consult Dr. Eyre as to the advisability of the patient returning to India. I made no suggestion to Dr. Eyre regarding my opinion as to the patient's illness. As he was the pathologist who had charge of the case I regard his views as of supreme importance, and therefore quote the following paragraph from his reply: "The various specimens of pus that I have had from Mr. — have been very carefully examined for the amœba dysenteriæ but without success. His recent infection (even assuming that it was a merely terminal infection) appeared to be purely bacterial. A certain particular streptococcus was always present in the pus, whilst the examination of his blood showed that his resisting power to this particular streptococcus was practically non-existent, although quite normal to numerous other pathogenic bacteria, including the bacillus of epidemic dysentery. Again, the effect of the treatment which Mr. — has undergone has been to gradually raise his resistance towards the streptococcus already referred to considerably above the normal, and this increase in resistance has gone hand in hand with improvement in general health and clinical symptoms; and now, so far as the clinician is able to form an opinion (*vide* Dr. Hale White) he is absolutely cured. The recent examination of a specimen of blood showed that his resisting powers against the streptococcus are still maintained at a higher level than would be found in a normal individual, so that for the present and probably for many months to come he is, and will be, less liable to a fresh infection or a relapse than a person in ordinary health proceeding to India for the first time. These, I think, are conclusions that would be subscribed to by any bacteriologist who is familiar with this method of treatment (that is, by the inoculation of therapeutic vaccine). How long this acquired immunity to the particular organism which I regard as responsible for his previous affection, *and which was in all probability the cause of his appendicitis and subsequent trouble*, will remain efficient it is impossible to say; but given the ordinary care that would be exercised by one familiar with India and the conditions of life there, I repeat that I do not consider that he runs any greater risk in returning to India than a newcomer would run of infection with the same organism, and any risk that might be present would be still further reduced if his return to India were delayed until the termination of the hot season."

3. As regards the *treatment*, there is little to add to what has already been detailed above. The vaccine and the appropriate doses were prepared by Dr. Eyre and I injected them into the patient's flank with strict aseptic precautions at intervals selected by Dr. Eyre after examination of the opsonic index of the blood to the particular streptococcus inoculated. The complete success of the treatment adds another triumph to the methods of Sir A. E. Wright in dealing with cases of bacterial infection.

Before closing this report I should like to pay a tribute to Miss Greenhalgh who nursed the patient throughout his serious illness extending over ten months, and for eight months of that time was in sole charge.

Hampstead.

Clinical Notes:

MEDICAL, SURGICAL, OBSTETRICAL, AND THERAPEUTICAL.

"STARVATION CURE" IN A CASE OF DIABETES MELLITUS.

BY F. CARMINOW DOBLE, M.R.C.S. ENG., L.R.C.P. LOND.,
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WHETHER or not starvation has any effect on diabetes mellitus is a most difficult point to prove, as very few patients would submit to this treatment for long enough to enable any inference to be drawn one way or another. One case that I have under my care has given me the opportunity of judging the effect, and in a very remarkable manner.

A man, aged 56 years, had been suffering from this disease for some years, and the urine had never been free from sugar. A year ago he had an attack of apoplexy, probably from a cerebral hæmorrhage due to diabetic endarteritis. There was no paralysis afterwards but a transient aphasia and mania, which are now chronic. His delusion was that he and those dependent on him were in a state of poverty. Week by week he thought that his money and estate were gradually diminishing and that his wife and children were starving. He then absolutely refused food and although acknowledging that he was very hungry the most tempting dishes of his favourite foods when set before him would not induce him to eat. Twice a day he was forcibly fed with Benger's food, milk, beef tea, and eggs, but only sufficient could be given to keep him alive. This lasted for three months; after that period he started eating on an average one meal a day, the forcible feeding still being kept up. He lost weight rapidly and at the end of the three months had dropped from 16 to 10 stones. Every symptom of diabetes has now disappeared and the sugar has not been present in his urine since his three months' fast. At the present moment he is rapidly gaining weight, being now 12½ stones. He takes two meals a day, one consisting of meat and green vegetables and the other of milk and eggs. Except for potatoes, bread, and sugar his diet is unlimited.

As an opportunity of observing the abstinence from food in this disease must be very rare I thought that the case would be worth publishing.

Reedham, Norfolk.

TWO NOTES ON THE TREATMENT OF SYPHILIS BY ARYLARSONATES.

BY E. URQUHART BARTHOLOMEW, M.R.C.S. ENG., L.R.C.P. LOND., L.M.S.S.A. LOND.

THE two following cases may be of interest to those readers of THE LANCET who are at present watching the results of the treatment of syphilis by the various preparations of arsenious acid. The first case shows the danger of this particular treatment unless under the direct and continuous supervision of a medical practitioner.

CASE 1.—A man, aged 30 years, consulted me on account of vomiting, diarrhœa, pains and a feeling of heat in the abdomen. He complained of debility and feeling nervous and unfit for his work and was evidently in a very depressed and hypochondriacal state. He was a man of magnificent muscular development and told me that he had never had a day's illness in his life. After some little beating about the bush he confessed that he had come to consult me because he was afraid he had contracted syphilis and had supposed that his symptoms were a manifestation of that disease. Moreover, he had recently noticed a rash. The history proved to be as follows. *Six* days after exposure to possible contagion he noticed "a little red pimple" on his prepuce, which "itched very much" and which "he scratched until it bled." This pimple first became yellow and discharged matter and finally became an open sore. He was told by a friend that this was a chancre and that he had contracted syphilis. His friend, who appears to be a studious reader of medical literature, also advised him on no account to take any mercury as it would rot his bones and bring him out in a rash and prevent him from carrying on his work. He finally persuaded him to dose himself with soamin. This the patient commenced to do and had been taking gradually increasing doses for a fortnight. He acknowledged that occasionally he forgot to take his dose and made up for it by increasing the successive doses during that day. He took the tabloids by the mouth and not by hypodermic injection. He had treated the sore on the penis by boric lotion and that was now healed. Upon examination I could find no evidence of syphilis. There was no induration or loss of tissue at the place where the sore had been; there was no history of sore-throat, bone pains, or headache. The patient was slightly anæmic and evidently highly nervous. The supposed secondary rash proved to be an acne. Here we have a man who takes the opinion of a friend and doses himself according to his own ideas with a dangerous drug and suffers much mental torture which would instantly have been allayed by a visit to a medical man. I am afraid that he is one of many such.

The second case shows the value of the arsonates in cases in which mercury seems to have lost its power.

CASE 2.—A man, aged 26 years, contracted syphilis during March, 1902. Eight weeks after the primary sore a secondary roseolar rash appeared. He was treated with pills for three months, then an interval of six weeks was allowed, and treatment resumed "on and off" for a period of two years. He then considered himself cured. About two years ago his nose became affected. It at first appeared simply swollen; then just on the edge of the swelling on the right side a hard red spot appeared which became pustular and finally ulcerated. This slowly healed under treatment. About seven months ago another hard papule appeared at the base of the nose and gradually spread all over it. He was energetically treated with mercury and iodide of potassium but no improvement was observed and he was finally sent to me. When I saw him the whole nose and cheeks surrounding it for about one inch were indurated, painful, and covered with tertiary ulcers. He was very anæmic and debilitated and was undergoing much mental suffering from his fear of losing his employment and from the failure of his previous treatment. I at once commenced injections of orsudan (10 grains) on alternate days until I had injected 100 grains. I was much struck by the rapidity of the improvement and the absence of any toxic symptoms. The induration has now disappeared, the ulcers are healed, and the appearance of the nose is not worse than after a severe attack of small-pox. There is no doubt that in certain cases mercury loses part, if not all, of its specific power, and in these cases we appear to have a valuable means of cure in the arylarsonates.

Green-street, W.C.

COMPOUND DISLOCATION OF A TERMINAL PHALANX; EXCISION.

BY W. E. HOME, B.SC., M.D. EDIN., M.R.C.P. EDIN., D.P.H.,
FLEET-SURGEON, R.N.

ON March 2nd, 1908, a chief armourer was brought to me in H.M.S. *Excellent* having some 15 minutes before experienced a compound dislocation of the terminal joint of the right middle finger. The distal phalanx was hanging, attached merely by the tissues on the palmar surface of the joint, but as there was bleeding from that distal part it was clear that the arterial supply was not entirely cut off, so it seemed it might be possible to do an excision and spare the patient an amputation. He was put under an anæsthetic and the parts were cleaned. (I think a tooth brush very useful for cleaning parts about the fingers; it is difficult to reach the web with a nail brush, this being generally too large.) I removed with a metacarpal saw the head of the second phalanx and cut all the cartilage off the base of the distal phalanx. I kept these in apposition by stitches through the extensor tendons and other soft parts and sutured the skin. The wound healed well, though I did not get the skin to heal by first intention, but the patient was sent to duty able to do his work on April 1st (30 days after). I saw him again on July 31st. Ankylosis was complete. The stiffness gave him no inconvenience. He was saved the deformities of shortening and loss of nail while the pulp of the finger with its greater sensitiveness remained.

Though I daresay often done, these small things are rarely reported, and it had not previously occurred to me that such an operation might be feasible.

Medical Societies.

ROYAL SOCIETY OF MEDICINE.

PATHOLOGICAL SECTION.

A Statistical View of the Opsonic Index.

A MEETING of this section was held on Feb. 16th, Mr. S. G. SHATTOCK being in the chair.

Mr. M. GREENWOOD, jun., of the London Hospital Statistical Department, read a paper entitled "A Statistical View of the Opsonic Index." He said that it was clear enough that the value of opsonic determinations had been disputed by experimental workers whose records appeared—at least to a statistical onlooker—to entitle them to some more conclusive answer than the facile charge of imperfect technique. Be that as it might, some vindications of the opsonic method exhibited traces of circular reasoning. Thus, if it were asserted (1) the opsonic content of normal serum was variable, (2) the opsonic index was not an accurate measure of the opsonic content of the serum, a list, however long, of "healthy" people whose indices in terms of one another were close to unity would only refute (1) if (2) be assumed false, and would only disprove (2) if (1) was assumed to be incorrect. Evidently both assertions could not be simultaneously disproved by one set of determinations without a *petitio principii*. A good deal of evidence ostensibly advanced to prove the trustworthiness of the opsonic index did in fact assume the truth of what was to be demonstrated, and it was necessary to go behind the index, the ratio of two quantities, to the elements from which it was fashioned. The pivot upon which the whole question turned was evidently the degree of credence to be attached to mean phagocytic power as determined from a small number of cells. It was not difficult to see that the errors involved fell into two groups. They had first the errors of technique, and, secondly, the errors dependent on the fact that they measured not all the cells but a sample of them. It had been argued that since they could not definitely separate the two causes of error, the method was not ripe for statistical treatment. The rejoinder seemed to him at least overwhelming. One took the data furnished by an experienced observer, analysed them, and obtained a measure of uncertainty—i.e., found that two samples differing one from another by not more than an assigned amount could not with certainty be referred to separate classes or "populations." How much of that uncertainty depended on the worker's incomplete technical skill and how much on inherent biological variability it might not be possible to define. But if the technique of the worker were the best available at the time it was clear that any *Spielraum* of error found in his work must give the minimum total error of the method at the stage of perfection marked by the epoch to which the measurements referred. He spoke only of the error attaching to the method as practised by the best workers at the present time. The full treatment of the problem of errors of observations dated from Laplace, whose work was extended by Poisson and, in a sense, completed by Gauss. Very little reflection was enough to convince anyone that the quantitative treatment of such a problem, its symbolic expression, required as a preliminary the fulfilment, or assumed fulfilment, of certain conditions. Evidently variation might be conceived to result from many causes; decision between conflicting claims was not generally possible. All Laplace and Gauss could do was to select the most plausible hypothesis and to assume its truth as a basis for a provisional treatment of the problem. In effect, the assumptions were as follows: (1) Variation was due to an indefinitely great number of cause-groups, (2) these cause-groups were independent one of another, and (3) each group taken by itself only contributed a small amount to the total variation. On that basis, with the help of reasoning admitted by all competent judges to be sound, was constructed the famous "Normal Curve of Errors." He thought they would agree that the fundamental axioms of the "normal" treatment of errors were not necessary canons of thought but working hypotheses. Therefore, if it were found that any given set of observations or measurements exhibited variation not adequately described by a frequency curve of the "normal" type, it was possible that the case was one in which the causes of variation were not capable of being brought within the four corners of the Gauss-Laplace postulates. In other words, the "normal" law required to be experimentally tested. Karl Pearson was the first writer who, dropping the "normal" conditions, proposed frequency systems which included the "normal" curve as a particular case and could be put to the test of experiment. They were not there concerned with the mathematical form which had been given to those generalised error-curves; the point he was trying to make was an experimental one. If a system of measurements varying round a mean value presented itself in the course of experimental work, it might be that an adequate description of it would be furnished by the "normal" curve. It might be that the "normal" curve failed, and every other frequency system, those of Pearson included, also failed. In such a case the experimenter might either conclude that the system was not homogeneous or that it was an example of variation hitherto uncatalogued. If, however, while the "normal" curve failed one of the Pearson curves described the observations with great exactitude, then they were justified in refusing to adopt the measurements of the limit of error deduced from the postulates of the "normal" system, and must frame other tests in accordance with the hypotheses upon which the Pearson type curves were founded. Agreeably to those fundamental principles, Dr. J. D. C. White and himself had undertaken a tolerably extensive study of the variation observed in the enumerations of phagocytic cells made for the purposes of the opsonic index with respect to the tubercle bacillus. Their material consisted of 15 counts of cells made by Dr. Alexander Fleming, Mr. T. S. P. Strangeways, and his co-workers Miss M. P. Fitzgerald and Dr. R. I. Whiteman. The smallest count in the series was of 400 cells, the largest one of 2000. The majority included 1000 cells. They employed the usual processes of statistical analysis, and found that while not one of those counts could by any possibility be regarded as "normal," all, with one unimportant exception, were extraordinarily good examples of variation described by skew curves. The types discovered were those known as Pearson's first and fifth types. It was apparent that the distributions were highly asymmetrical or, in technical language, exhibited "skewness" of a high order, That, of course, was an experimental proof that the Laplace-Gaussian postulates with reference to the causes of variation were, taken as a whole, inapplicable to those examples of phagocytosis. It was an interesting matter of speculation, at any rate, to inquire how that variation might conceivably have arisen. Sir Almroth Wright had offered, if he understood him correctly, the following suggestion: that in any mixture of serum, corpuscles, and bacillary emulsion, the actual number of bacilli present might be large enough to give each phagocyte more bacilli than were ever ingested even by the most highly charged cell in the count. But since the mixture of the respective constituents was not perfect, all phagocytes had not the same chance of ingesting bacilli; some cells had numerous bacilli within reach, as it were; others were far away from the well-spread board. In other words, variation in bacterial content was not so much a matter of inequality in phagocytic powers as of the cells not having each the same chance to secure prey. If the hypothesis were true, the Gaussian postulate that no one cause-group contributed much to the total variation did not hold for phagocytic counts. Therefore a skew distribution might be expected and would not improbably take the form actually observed. Accordingly, while such a hypothesis was consistent with their results, it was to be remembered that a multitude of other hypotheses, including one of a true biological variability of the cells, would accord equally well with the ascertained facts. He next passed to a comparison between the curves obtained from Mr. Strangeways's material and those yielded by Dr. Fleming's data. The experimental conditions of the two workers were not the same. Mr. Strangeways and his collaborators, Miss Fitzgerald and Dr. Whiteman, used an emulsion expected to give a frequency of about 1·5 bacilli per cell for a "control" count. Dr. Fleming used a thicker emulsion. For theoretical reasons he had surmised that with a thicker emulsion the skewness would be diminished, and hoped that a sufficient approach to symmetry might be attained to allow of using a Gaussian test. Although he was in so far justified that the skewness was distinctly less in Dr. Fleming's counts it was still very

marked; so that even were that difference in skewness to be entirely attributable to the thicker emulsion of Dr. Fleming's technique, it was plain that under possible experimental conditions the emulsion could not be made thick enough to render any application of the "normal" curve practicable. In speaking of the reduced skewness of the Fleming counts he guarded against saying that the thickness of the emulsion was the only factor involved. In his opinion, Dr. Fleming's counts showed signs of not being random samples but selections. He had brought the matter forward because at least it was fair to point out that such differences as they could find between the data of Mr. Strangeways and of Dr. Fleming were favourable to the former's method of work. What bearing had those results on the practical value of the opsonic test? Let them look at the matter entirely from the graphical standpoint. Take any one of the diagrams shown. Conceive of it as representing the whole "population" of cells involved in any one case. Then remember that in practice one took a small quantity of 50 or 100 cells blindfold from this "population." The most superficial consideration of the diagram led at once to the following conclusions: 1. They were not equally likely to obtain random samples, each of which differed by the same quantity from the mean of the whole "population," one in excess, the other in defect. In other words, samples were liable to biassed error. 2. The range beyond the mean was greater than the range up to the mean. Therefore greater positive deviations might conceivably occur in random sampling, while correspondingly great negative deviations were excluded. That, of course, only applied to extreme deviations. 3. Owing to the marked skewness of the curve the mean was not a good descriptive constant; the mode (the most frequently occurring as distinct from the mean value) was more trustworthy. The whole object of employing a mean value was to have expressed by a single constant some of the main features of a distribution. In any symmetrical frequency, such as the "normal" curve, the mean coincided with the mode and was evidently the most useful single constant they could obtain. When, however, there was a marked skewness, as in their phagocytic counts, since the mean and mode were far apart, knowledge of the mean only might lead them to form a very incomplete idea as to the general features of the count. The mode, on the other hand, was relatively better for summarising purposes, although, of course, no one constant would render an adequate account of any frequency system. For those practical reasons and certain theoretical ones which he need not discuss, he suggested that it was advisable to replace the mean by the mode for testing indices. In his opinion they had so far succeeded in demonstrating that phagocytic distributions were markedly asymmetrical; this asymmetry, although reduced, was not removed by emulsions of (from the experimental standpoint) maximal thickness; the mode of a phagocytic distribution was a more trustworthy constant than the mean; a corollary of positive and negative deviations would not occur in random sampling equally often. Further, they had not proved but rendered somewhat probable that samples of 25 were untrustworthy, at least within the limits of 0·8 and 1·3. He could feel no great degree of confidence that samples of 50 or 100 would necessarily give results of much greater accuracy.

Mr. SHATTOCK observed that they had learned from Mr. Greenwood that their method was open to criticism and the conclusion was their system must be improved.

Sir ALMROTH E. WRIGHT opened up a wide question of medical morals by discussing the advisability of deputing skilled work, such as bacteriology, to others. Would not the best results be attained by physicians being trained to make their own bacteriological investigations? He pointed out that the calling in of a consulting physician by a practitioner was a recognised practice, but in that case the consultant was called in in the position of a teacher, whilst, on the other hand, the bacteriologist when summoned for assistance in a difficult case was looked upon in the light of a servant.

Colonel W. B. LEISHMAN, R.A.M.C., said that at the Royal Army Medical College they had come to place more and more reliance on the method of estimation of phagocytes. If this method of opsonin estimation had not been found to be a good one they would have thrown it over for the method which would give them better results. In regard to the important matter of "the control," he considered that more research was required into the causes and limits of normal variations, and they should be undertaken in the case of each germ used as a vaccine.

Mr. KENNETH W. GOADBY said that he had attempted to estimate the times for inoculation by the clinical condition of the patient and, in that way, to eliminate the somewhat tedious estimations that were necessary for the index determination, but he had not been able to obtain as good results by estimating the time at which the dose should be given as he had by taking into account the main oscillations of the opsonic curve. He had tried various numbers of cells from 25 to 200 in making his estimations, but he had eventually gone back again to the original 25. He had always recognised that the error in estimation due to causes other than the personal equation would be about 20 per cent. He found from practical experience that a thick emulsion used for a short time gave better results than a somewhat less thick emulsion for a longer period, so that his method of working at the present day was to use a thick emulsion well centrifuged with a ten minutes' exposure, to estimate the index with 25 cells, and to take into consideration, not so much the exact difference between that index and the previous one, so much as the general trend of the indices taken on the different occasions. In relation to the use of the opsonic index the curve of immunity by the injection of killed cultures of organisms, or by the injection of red blood cells, apparently underwent a long and more or less relative rise to the dose used within the ordinary limits, but he had constantly found that the opsonic index would frequently tend towards a lowered reading towards the end of any given treatment rather than a high index. If the opsonic index was a direct measure of the immunity of the animal, as, for instance, the hæmolytic dose of a given anti-serum might be, the fact was paradoxical, and he confessed he did not see any method of reconciling the two. He found, however, that a high index was much more common in the earlier stages of treatment and might often run up to a high figure, 4·5. Those results had occurred time and again, and in comparing a large number of opsonic curves from various patients he found it a fairly constant phenomenon. That the accuracy of the opsonic method of estimating the opsonic index was not a mathematically correct one might no doubt be placed in a similar category as the estimation of the number of red blood cells circulating in the blood, but that the opsonic index was very nearly correct for practical purposes when the personal equation was the same was shown by the fact that when a given serum was diluted in definite proportions the opsonic index plotted as a curve corresponded very closely to the theoretical one. He thought that a method of any sort which gave some insight into the behaviour of the blood after inoculation or previously to inoculation was far better than an attempt to estimate both dose and blood condition on merely clinical grounds.

Dr. J. C. G. LEDINGHAM said that whatever method they adopted of estimating the opsonic content of a serum they would ultimately have to reckon with that peculiar distribution brought to light by Mr. Greenwood's work and his suggestion to select the mode as a more trustworthy constant than the mean, must seriously be considered. Mr. Greenwood had dealt with the accidental errors and the amount of precision which it was possible to attain by the method as at present practised. He should like to lay before them the claim of the systematic error or the error involved in the method itself as a method of determining the amount of opsonic antibody in a serum. It was generally accepted now that opsonic action was a complex one, being dependent on the interaction of amboceptor and complement. In the testing of hæmolytic serum and bacteriolytic serum they took that fact into consideration and in comparing two such sera they inactivated them, diluted if necessary, and employed a standard complement. In opsonic work that had so far been done only to a very limited extent, but the results already obtained justified the further elaboration of a method which would do justice to that conception. That the complement-content in normal men and animals was an extremely variable quantity had been shown by many workers and the variability had also been shown for immune serum. It seemed, therefore, quite reasonable to suppose that many of the small variations in the opsonic index recorded by some observers, which occurred as the result of walking, running, over-exertion, slight malaise, menstruation, and pregnancy,

were really complement-variations. One would like to see those points accurately established by a method which would take into account the complex nature of the opsonic antibody.

Mr. GREENWOOD then replied.

MEDICAL SOCIETY OF LONDON.

Pernicious Anæmia.

A MEETING of this society was held on Feb. 22nd, Mr. C. B. LOCKWOOD being in the chair.

Mr. LEONARD S. DUDGEON read a communication on some points of the Pathology of Pernicious Anæmia. He emphasised the point that the blood in all the cases of pernicious anæmia which were to be referred to in this communication gave a typical blood picture—namely, a diminution of the red cells to about 1,000,000 per cubic millimetre, a high colour index, various degenerative changes in the red cells, great diminution or absence of rouleaux formation, marked poikilocytosis, few blood platelets, deficient fibrin formation, leucopenia, a relative lymphocytosis and the presence of nucleated red blood corpuscles—megaloblasts and normoblasts. There was no clinical evidence of any disease apart from pernicious anæmia in any of these cases and in those instances where a necropsy was performed no cause was found for the severe anæmia. He next referred to the colouration of the serum. In nine out of the 11 cases the serum presented a yellowish-green colouration which was quite distinctive. There was no reaction for bile pigment and it failed to give any spectrum. In the remaining cases this colouration of the serum was obscured by the presence of bile pigment. He stated that in his experience apart from pernicious anæmia this reaction did not occur even in three cases where the blood picture was identical with that disease. In a paper published in the Proceedings of the Royal Society by Mr. Shattock and himself it was stated that fat had been demonstrated in the leucocytes in the circulating blood in a large number of diseases, but contrary to expectations this phenomenon had not occurred in pernicious anæmia. The polymorphonuclear cells in this disease contained innumerable granules which were opaque and stained a deep brown colour with Scharlach R, but if the film preparations of blood were previously washed in any of the fat solvents these granules were found to be absent. It had been suggested that these granules might be indirectly related to the breaking up of red blood corpuscles owing to a hæmolytic action. If this view was correct they should have to admit that hæmolysis was continuously going on in pernicious anæmia; this, however, had not been shown to occur. Mr. Dudgeon stated that for some time past he had been carrying on investigations with normal and immune blood as to the presence of hæmolysins, hæmo-agglutinins, and hæm-opsonins in various diseases. Special attention had been given to pernicious anæmia from this standpoint owing to the hæmolytic hypothesis which many hold for the origin of this disease. In two papers received by the Royal Society he had shown that auto-hæmolysis did not occur even when the immune serum was complemented, as far as his observations went in pernicious anæmia, and that the immune serum also failed to hæmolyse normal red cells. In one instance the immune serum had a marked hæmolytic property on the red blood corpuscles from a case of acute pneumonia, but to a less extent than that possessed by normal serum. It was shown that the serum from cases of pernicious anæmia had the same power to hæmolyse the red blood corpuscles of a guinea-pig as normal human serum. In one instance the immune serum obtained at the post-mortem examination from a case of pernicious anæmia caused a high degree of hæmolysis of the patient's red cells, but it was found that this action was dependent upon a streptococcus present in all the blood tubes. This organism was found to be the streptococcus pyogenes and was capable of hæmolysing normal and immune red cells quite apart from the action of a serum. Further observations had shown that the immune red cells could be hæmolysed, however, in the presence of normal human serum. It was further shown that the immune serum from this disease was less potent in agglutinating normal red cells than the serum from other diseases. Auto-agglutination was never met with. In those examples previously referred to, where normal serum had been found to hæmolyse the immune red cells, hæmolysing agglutinins were similarly demonstrated, and the specificity of this reaction was proved. It had been suggested that anæmia was dependent upon the presence in the serum of a substance or substances which allowed the red cells to be taken up by the phagocytes in the blood. From the observations conducted in the present research there was nothing to support this view when the immune serum and immune red cells were incubated in the presence of normal leucocytes. As regards pernicious anæmia, however, it was shown, as in the case of the hæmolysins and hæmo-agglutinins, that phagocytosis of the immune red cells by normal human leucocytes occurred in the presence of normal serum. These observations on pernicious anæmia and similarly in certain other diseases lend great support to the view that the red cell itself must be reckoned with in observations on immunity. In concluding his remarks Mr. Dudgeon pointed out that although it was impossible up to the present time to demonstrate many of these most important points concerning the blood immunity of pernicious anæmia, yet it was known that phagocytosis of red blood corpuscles (mainly by endothelial cells) occurred n the various tissues in this disease, as also hæmolysis; but how far these changes were directly related to the terminal stages in the disease and how far to its actual source remained to be seen. He did not consider that there was any evidence to show that auto-infection by streptococci and the resulting auto-intoxication was in any way related to the pathology of the disease.

Dr. H. S. FRENCH read a paper on Some Clinical Aspects of Pernicious Anæmia. He said that in cases of pernicious anæmia it was remarkable how constantly there was slight pyrexia. Three points stood out saliently—namely, first, that when the patient was ill enough to be admitted to hospital it very seldom happened that there was not a rise to something between 99° and 100° F. every evening; secondly, that pyrexia exceeding 101°, though possible in pernicious anæmia, was decidedly unusual unless there was some intercurrent malady such as tonsillitis or pneumonia; and thirdly, that there was little tendency to subnormal temperatures in the morning, especially if the records were made only at 10 A.M. and 6 P.M. Judging from what happened in other asthenic conditions, such as those associated with chronic heart disease, for example, one would not have been surprised if the temperature in a severe case of pernicious anæmia had shown a tendency to be persistently subnormal; judging from what happened in cases of chronic sepsis on the other hand, one might have expected a moderate degree of evening rise, but at the same time a considerable drop below normal in the morning. Neither of those types of temperature were at all like that of most cases of pernicious anæmia; in that disease it might be roughly said that the more the general condition of the patient improved under treatment the less did the tendency to evening pyrexia become; but that when the patient was decidedly anæmic and ill the condition was not like that of the majority of cases of pernicious anæmia unless the patient's temperature tended to rise to something between 99° and 100·5° every evening without any great fall below normal at 10 A.M. in the morning. A large number of cases of pernicious anæmia showed that slight but persistent pyrexia. The smallness of the variation in temperature at different times of the day was noted in some cases. He felt sure that pernicious anæmia as they knew it was but a late stage of that which might be much commoner than they thought, recovering spontaneously perhaps in many cases as pulmonary tuberculosis did in others, breaking out into an acute phase in others, running a subacute or chronic up-and-down course in yet others. They were now able to recognise pulmonary tuberculosis early, by bacteriological and other means, in a way that their forefathers could scarcely have believed possible. He hoped that similar early recognition of pernicious anæmia would also become possible as time went on. It was recognised far earlier now than it used to be; and perhaps if it were thought of and diagnosed earlier still some at least of the patients might be cured. In conclusion, he said that the points he had tried to bring out in his paper were: first, that slight evening pyrexia was seldom absent in cases of pernicious anæmia that were decidedly ill; secondly, that pigmentation within the mouth of precisely similar character to that seen in Addison's disease might occur in cases of pernicious anæmia treated with arsenic; thirdly, that the spleen was to be felt in about one-third of the cases and that it was

really enlarged; fourthly, that nerve symptoms were not at all uncommon in pernicious anæmia; fifthly, that the colour index, though typically higher than 1, when an advanced stage of the disease had been reached, was not always nor continually high, especially during a period of improvement in the patient's condition when it might be actually low; and, lastly, that pernicious anæmia, as they now knew it, was very possibly only a late and almost incurable stage of a disease which it was to be hoped would some day be recognisable early enough to be cured.

In the discussion that followed Dr. F. DE HAVILLAND HALL, Dr. WALTER BROADBENT, Dr. F. PARKES WEBER, and Dr. VINCENT BELL took part, after which Mr. DUDGEON and Dr. FRENCH replied.

MEDICO-LEGAL SOCIETY.

The Socialist Criticism of the Medical Profession.

A MEETING of this society was held on Feb. 16th, Dr. F. W. HEWITT, Vice-President, being in the chair.

Mr. GEORGE BERNARD SHAW opened a discussion on the Socialist Criticism of the Medical Profession. The speaker stated that he belonged to a generation which began life by hoping more from science than perhaps any generation ever hoped before and possibly might ever hope again. He was not in any way hostile to science. At the present time they were passing through a phase of very considerable disillusion of science. It had not lived up to the hopes he and others had formed of it in the "sixties," but those hopes had left a mark on his temperament that he would never get rid of. Almost all his life it had been his good fortune to number among his best friends members of the medical profession. The doctor of the present day had been practically driven into the position of a private tradesman; the medical profession had never really accepted that position except in so far as it had been forced to accept it. Nowadays almost all the old professional pretensions and delicacies had been dropped. A doctor gave an opinion and the patient asked him what he owed as boldly as one would a shopkeeper in the street. He could remember the time when one did not do that. This position had never really been recognised, and they must realise it and allow that as competition in ordinary trade and business had been shown by elaborate theoretic demonstration to be the best thing in the world medical affairs could form no exception. But no one from Adam Smith to their own time had attempted such a demonstration with regard to the medical profession. The idea of a doctor being a tradesman was abhorrent to any thoughtful person, and therefore considerable restrictions were found. Advertising in the ordinary way was a thing forbidden. They would discover that when a professional man had become so successful that he wanted to "weed out" his poorer patients and keep his richer ones he raised his prices and also gave up the power for ever of recovering his fees in the county court, which was what the ordinary practitioner very largely had to do at the present time. They must understand that when he called the ordinary private practitioner a tradesman he was not reproaching him in any way. The doctor was a tradesman and had no alternative to being one. There being no systematic State organisation of his profession naturally the doctor was forced by circumstances—however repugnant to his feelings—to go into the commerce of healing and to become a professional "medicine man"—a professional healer—who sold "cures" because that was what the public went to him for. The great mass of the medical profession had to get what they could and be very glad to get it. A doctor was driven to the system which was alien to his own instincts as a professional man. One result of competition in the medical profession was that it had made the doctor most appallingly and humiliatingly poor. The average doctor of the present day was an abjectly poor man. His audience should remember that four out of five of the adult male population of this country were labourers working for weekly wages. They generally had the benefit of the very best medical advice. They went to the hospital and were operated upon by the most skilful surgeons. But there was a large class who went to clubs. If a doctor had a large club practice and he could not afford an assistant, one of the things that would happen to him was that he would give up ever taking off his clothes. The night bell of such a practice never stopped. Doctors always had to give a good deal of gratuitous advice and when their actual work was stopped through illness or anything else their earning power stopped. Compared with the man of business or with the ordinary tradesman it would be found that the man of business and ordinary tradesman had a great advantage in that respect. Doctors had also appearances to keep up and incurred a great many expenses really for the sake of their patients. Just as people insisted on their servants wearing a particular livery, so they insisted on their doctor wearing a particular sort of hat and coat. It was therefore clear why the medical men who were in a tolerable practice were (many of them) much poorer than they appeared to be and why the great mass of doctors had to be described as miserably poor men. All that he (Mr. Shaw) had said tended to bring them face to face with the attitude of socialism towards the doctor. The attitude of socialism towards the poor man was always that the poor man was necessarily a bad and dangerous man. The attitude of the man who was not a socialist towards poverty was that poverty was a very good thing, that it developed character, and in other particulars had a beneficial effect. These people showed the poor every sign of sympathy except that of becoming poor themselves—that step they never took. But the really sensible man, whether a socialist or not, always regarded poverty as a bad thing and held that a poor man was always dangerous. If they were going to have doctors they had better have doctors well off. If they were going to have landlords they had better have rich ones. Taking all the round of professions and occupations they would find that every man was the worse for being poor, and the doctor was a specially dangerous man when poor. The doctor's poverty at the present time drove him necessarily into doing things which he would not do if he were independent. He was—like most men—as honest as he could afford to be. He could not afford to be scientifically honest. The carrying out of all the various hygienic measures which doctors knew to be scientifically necessary would be enormously expensive, and the slightest attempt to enforce them on patients or to let patients know that the absence of them was dangerous would cost a man his practice and his livelihood. If they took the great mass of patients that doctors had at the present time, what they wanted was not really medicine or operations but *money*. They wanted better food and better clothes and more frequent changes of the latter. They wanted well-ventilated and well-drained houses, but what was the use of prescribing those things to unfortunate people who could hardly keep body and soul together? The patient, not being able to afford scientific treatment, demanded cheaper cures, and the result was that the doctor had to gratify him in a way, and, having no other means of livelihood, he prescribed cheap cures and thereby became a swindler. He (Mr. Shaw) was speaking in a cold scientific way—that was the proper light in which to view the matter. The ordinary patient demanded cheap cures and had the greatest objection to sanitary legislation of any kind. The doctor depended on his patient for his livelihood and therefore was dependent on the patient's ignorance and finally had to flatter all the worst delusions of the patient. A doctor was like a servant trained in one of those big charitable institutions that train servants. He obtained his training at the hospital, had nurses and antiseptics, and so on. He was placed into a building wonderfully and beautifully built with no right angles but beautifully rounded corners, and then after all that (exactly like the servant) he was suddenly pitched into a poor district and had to go through life in surgically dirty clothes and do his work in surgically dirty rooms with surgically dirty people who could not afford medicines or anything, and he got a sort of skill at it. Now, he (Mr. Shaw) wanted to contrast with the ordinary doctor the medical officer of health. Not the sort of medical officer of health sometimes met with in the country. When the speaker was on a local authority it was their good fortune to have as their medical officer Dr. Sykes, and a very hard time that gentleman had in managing the vestry-men. He was judged altogether by the vital statistics of his district. Dr. Sykes's income did not get larger when the district got sick; the private practitioner's did. They revelled in an epidemic. At the meeting of the borough council from time to time Dr. Sykes's salary came before them. The ordinary

councillors could not understand why several hundred a year should be paid to a doctor. The only point upon which it was argued was the vital statistics of the district. Dr. Sykes was independent of those borough councillors—they had no power to dismiss him. In his (Mr. Shaw's) opinion the medical officer of health was in an ideal position—the socialist position—the position that one wanted socialism to place all doctors in. Mr. Shaw then came to the question of the organisation of the medical profession and dwelt on the—as he put it—outrageous way in which the present system left the profession unorganised. A doctor at the present time was expected to do everything connected with his profession. That did not apply to the other professions. The judge sentenced a man to be hanged, but he was not expected to be the hangman; if he were the doctor he would be expected to act as hangman. A bishop was not expected to blow the organ, but if he were a doctor he would be. There were men of extraordinary dexterity as operators whose whole time should be reserved for the most difficult cases, but instead one found those men poulticing whitlows and doing trumpery dressings that should be done by the nurse. They were found prescribing for ladies who had the same reason for asking for tonics as the charwoman had for asking for gin. In order to get the maximum of hygienic influence and the greatest economy in using the skill of the profession it was necessary to get medical men *organised*, so that different grades did different work, and that the mere routine should not be left to the best men to do. Such organisation was altogether impossible while private practice was the rule. It could only be done if the profession was organised publicly by the State. He (Mr. Shaw) desired to touch on the economics and psychology of private practice. It was impossible even to get the thing placed on a scientific basis as long as the private practitioner was in his present position of being at the mercy of the patient and being employed by the patient, paid by the patient, and "sacked by the patient." A private practitioner could not get ahead of the prejudices of his patient, and one of the things which they ought to release the doctor from was that abject dependence on his patient. Public opinion would be the final arbiter all along, but it was important to get every doctor in favour of educating the public scientifically, whereas now the doctor had the very greatest interest in preventing the patient knowing anything at all. A doctor should be independent of fashion. Scientific men should take up the psychology of fashion. A fashion was nothing but an induced epidemic. They must really have the medical profession socialised for the reason that medical men were finding themselves more and more driven to claim powers over the liberty of the ordinary man which could not possibly be intrusted to any private body whatever. If his hearers were going to have compulsory hygiene (and every day they were making strides in that direction) they were going to get rid of vaccination; they had done with that. It was as well to remember that the discarding of vaccination did not mean going back to the *status quo ante*, but the constitution of more scientific methods, and would impose on the citizen measures which had not been placed on him before and many of which he would resent and which would be fiercely criticised and denounced. Now, if these things were going to be done and if scientific opinion was going to compel people on such a scale, then there must be democratic control. It would be intolerable tyranny unless it were controlled by the people. More and more they were getting to treat the whole community as the Peculiar People were treated at the present time, that was to say, there was coming to be a sharp opposition between the authority of the parent and the authority of the doctor, and they were coming more and more to the point of giving the doctor power of saying what was to be done with the child and denying that power to the parent. It was a curious step and one that would be fought energetically. It was impossible to leave the body in the hands of a private practitioner. "You must make up your minds," concluded Mr. Shaw, "that the inevitable result is the socialisation of the medical profession. As to what will happen when you have the doctor in the responsible, dignified, and independent position of a public servant instead of a private tradesman—as to what will happen to the surviving private practitioner I do not know. I dare say there will be private practitioners—there is nothing in socialism to suggest there will not be; but the doctor and the patient will always have what socialism will provide for everybody—viz., the alternative to being delivered over to private enterprise. If a doctor finds himself in the position of depending on the caprice and ignorance of patients he will always under socialism be able to get an independent position in the public service, and if he elects to continue in private practice he will not be compelled to make the humiliating concessions and the treacheries to science that he has now to do. Having the alternative of public service he will be in as independent a position as if he were a public servant; and, on the other hand, the patient will always have the choice of getting public attendance, and so he, having the alternative, will be as well off with the private doctor as he will be with the public doctor."

Sir T. CLIFFORD ALLBUTT said that he did not think it would pain Mr. Shaw much to say that they—most of them—agreed with very much that he had said. They all had their own trademarks. Mr. Shaw had the trademark of socialism. The names of those things did not much matter; it was the things themselves they were concerned about. He thought that there was a great deal of difference between competition in trade and competition in a profession. If a man said "I sell a better soap than my neighbour" the ordinary person could find out readily whether it was better or not. But when it came to advertising that "I, Jones, am a better man than B or C," that was a very different kind of competition. He thought that they could not put the two things together, because in the case of a doctor the public could not find out, perhaps, whether they were in the hands of a skilful or an unskilful man. As to revelling in epidemics, he did not attach much weight to the expression, but he thought he ought to say that he had known one exceedingly able doctor in one of the Yorkshire dales who had a practice worth £1200 to £1400 a year. He had had to contend with an epidemic of typhoid fever and he had set himself day and night to deal with the matter and it had broken his sleep and health. In 20 years he had succeeded in eradicating that disease and the result was that he broke himself down and reduced his practice to £700 a year, at which figure his widow had had to sell it. That was the kind of revelling in epidemics which he thought was very common in the medical profession. He thought that it was a good thing that they had been led to realise that night, that under whatever flag it might be, the position was a very unsatisfactory one, and he admitted that it did want some such entire transformation as that which Mr. Shaw had sketched out.

Sir VICTOR HORSLEY said that they were very much indebted to Mr. Shaw for his speech. He had hoped to hear a speech on the nationalisation of the medical profession and had heard part of a speech on that subject. They were, as the speaker had said, face to face with the greatest social problem that the profession had had to meet. They had to consider what had been laid before them as a brilliant exhibition of the necessity of the reconstruction of the medical profession. It amounted to this, that from one point of view they were not organised as a profession. What was the idea of organising the profession? It was to insure that every practitioner should make a living wage. He had no shame in being called a tradesman. He sold his knowledge and in that respect was a tradesmen. He hoped that he was a very honourable tradesman, and he thought that honourable conduct stamped him as a professional man. The British Medical Association was trying to organise the medical profession, in the sense that a man should obtain what he deserved. The interests of the medical profession were the interests of the public. Mr. Shaw had told them of a nationalising of the profession and a bringing into higher relief those associated interests. To put the medical man into a more honourable position was to insure better treatment of the public. All they had to do was to see that the members of the medical profession were not going to lose by that transformation. They had the right to work and they also had the right to be properly paid for that work. They owed Mr. Shaw a debt of thanks for putting that situation before them in such a brilliant manner.

Dr. F. J. SMITH said that he felt that no subject so interesting to the medical profession and to the public had ever come before the society. He felt in two minds about Mr. Shaw, mistrusting his serious aspect, but he was not sure that some fun at their expense was not good for them. As to the socialisation of the

medical profession he certainly agreed with Mr. Shaw that socialism was coming. Socialism in medicine (if by that term they were to mean that the medical man became the official servant of the public) was coming rapidly. But then it might be that they had God before them in that matter or it might be mammon. It was said that they could not serve them both, but he felt that they might be going from one to the other when they substituted for their private patients—as their masters—a body of men steeped to the lips in ignorance of everything that hygiene, morality, and decent living meant. Medical men stood forth as the high priests of morality, decent living, and hygiene. They must be careful that they did not step from the frying pan into the fire. They must try to make the public believe that they were entirely disinterested in trying to educate them up to their standard of belief.

Mr. F. LAWSON DODD also spoke and said that on the lines laid down by Mr. Shaw they would be able to avoid the competition between practitioners which was degrading.

Mr. BERNARD SHAW having briefly replied the proceedings terminated.

UNITED SERVICES MEDICAL SOCIETY.

What Can be Done by Medical Officers of the Territorial Force in Time of Peace to Prevent Disease and to Further Physical Efficiency in Time of War.

A MEETING of this society was held on Jan. 13th, Surgeon-General Sir ALFRED H. KEOGH, D.G., A.M.S., being in the chair.

Lieutenant-Colonel C. H. MELVILLE, R.A.M.C., read a paper entitled, "What Can be Done by Medical Officers of the Territorial Force in Time of Peace to Prevent Disease and to Further Physical Efficiency in Time of War." He divided this into three heads: sanitary education, the collection of sanitary intelligence, and the encouragement of physical education. First, the necessity of educating the men composing the Territorial Army in the essentials of camp sanitation. The two great functions of sanitation, water-supply and the removal of excreta, had up to the moment been performed for their benefit—the turning of a tap or the pulling of a handle comprised all the individual effort demanded of the men in these two directions. If either the tap or the handle should fail to perform its proper duty the plumber or the turncock was at hand to rectify matters. He was now individually responsible that his excreta, which could no longer be removed automatically from the neighbourhood of his dwelling, did not become a source of nuisance or danger to himself or his comrades. The speaker emphasised strongly that the responsibility of the soldier with regard to his excreta and their proper disposal was absolutely and directly personal. The immediate burial of excreta was the first and leading principle of all camp sanitation: this was the first thing that the men and officers of the Territorial Army should be taught, and the burial of excreta must be done quickly. Men must also be taught the moderation of drinking, not merely alcoholic drinks but drinking generally. With reference to preventive inoculation against enteric fever, he thought that every young man who was going to be exposed to the risks of campaigning should be inoculated. As a practical measure extended to all ranks of the Territorial Army in time of peace (it would be impossible to perform the inoculation after the war had broken out) there were numerous difficulties in the way. Still, of the benefits of inoculation there could be no doubt to anyone who studied the evidence, and if the prejudice against it was ever to be removed the medical officers of the Territorial Army were in a better position to effect it than any other body of men in the country. Sanitary intelligence was a matter in which not only the medical officers of the Territorial Army could help, but in which all the country practitioners of the British Isles could take a share. The information needed would comprise the situation and character of the best camp grounds, the nature of the water-supplies of the country, and the buildings suitable for adaptation as barracks and hospitals, and the local facilities for procuring the equipment necessary for such adaptation. With regard to national physical education, there was no doubt that ordinary men of the class from which were recruited the ranks of the regular army, and to a less extent, though still to a certain extent, the classes from which the rank and file of the Territorial Army would be drawn, suffered from a want of ability to get the best use out of their limbs and this could only be remedied by universal physical education in boyhood and youth.

Lieutenant-Colonel C. P. OLIVER (R.A.M.C., T.F.) remarked that he had lately had personal experience of the light and airy fashion in which combatant officers of the Territorial Force treated the subject and of the general apathy that pervaded the commissioned ranks in matters of sanitation. He felt convinced that there was a splendid opportunity for the Territorial medical officer to educate and also to gain the sympathy of the combatant officers in this direction. As to the physical deterioration of the recruit, the speaker remarked that he looked for a great improvement in the physique of the rising generation as a direct result of the medical inspection of children attending the public elementary schools. This was the class from which practically the whole of the recruits were drawn.

Lieutenant-Colonel J. HARPER (R.A.M.C., T.F.) said that Lieutenant-Colonel Melville had pointed out the fundamental hygienic importance of the individual attending to his own excreta. The practical difficulty was how to teach the lesson to the officers and men of the combatant branches, who were the majority of the whole force and were careless, probably through ignorance, on this point. As regards inoculation for enteric fever, inasmuch as the protective effect was only temporary, at which period of his service did Lieutenant-Colonel Melville propose that the Territorial soldier should be inoculated so as to be ready for a war the date of which was uncertain?

Colonel ANDREW CLARK (R.A.M.C., T.F.) did not think that combatant officers paid sufficient attention to the medical department.

Major W. S. HARRISON, R.A.M.C., said that as regards the matter of inoculation against enteric fever he thought that they could safely say that the protection offered by inoculation would last at least two years, and as a matter of fact after examining the blood of men who had been inoculated seven years ago he had found traces of the result of their inoculation. He thought that if an army went into the field without being inoculated it would give six or eight times the amount of enteric fever as if it was inoculated.

Colonel W. G. MACPHERSON R.A.M.C., said that military medical officers knew a great deal about camp sanitation and that the education was quite simple. There ought to be no difficulty in training the Territorial Force in the subject. Camp sanitation would not be the chief difficulty in this country. In case of war large standing camps would be avoided and buildings would probably be utilised for accommodating the Territorial Force.

Surgeon-General W. L. GUBBINS said that there were three points: first, the inoculation of Territorials; secondly, the collection of statistics as regards camps; and thirdly, their education and physical training. Regarding the inoculation of Territorials, he looked upon this as impracticable to begin with. In India, where he had spent the last five years, he often found much difficulty in pushing inoculation. He thought that where there was a good commanding officer possibly some 75 per cent. of the regiment would be inoculated.

Lieutenant-Colonel R. J. C. COTTELL, R.A.M.C., alluded to the very excellent remarks as to drinking and was of opinion that a man could march just as well for half a day without drink as he could with it. He did not think that the men should be allowed much drink before they started the day, as it only caused increased thirst.

Major J. K. RITCHIE, R.A.M.C., thought that the education of the officers and men in the elements of sanitation was the most important duty of the Territorial medical officers. He also suggested that during route marches no water-bottles should be carried and that no men should be allowed to fall out to drink. They would soon learn how easy it was to do without drinking and how much better they could march.

Lieutenant-Colonel MELVILLE replied briefly and the proceedings terminated.

EDINBURGH OBSTETRICAL SOCIETY.

Descent of the Testicle.—Mendelism in Relation to Sex.

A MEETING of this society was held on Feb. 10th, Professor W. STEPHENSON (Aberdeen), the President, being in the chair.

Dr. D. BERRY HART gave a demonstration, with limelight illustrations, of the Physiological Descent of the Testes in

the Human Species. This he considered to be approximately as follows. When the Wolffian bodies disappeared in part the testes sank, and guided by the gubernaculum, or rudder, lay opposite, or nearly opposite, the internal opening of the inguinal canal. The gubernaculum at this stage was the inguinal fold, a V-shaped fold of peritoneum with unstriped muscle between the peritoneal laminæ. Above it was attached to the lower and outer aspect of the Wolffian duct, and from a point in the duct on the other side, opposite to this origin, the caudal portion of the testis passed up to the epididymis. This could be well seen in pig embryos. The gubernaculum could not, therefore, draw down the testis because, first, it was not attached directly or even indirectly to the testes; and, secondly, it was attached all along one side to the connective tissue and was not a structure with a free periphery. While the testes were still in the abdomen the gubernaculum, with the internal oblique and transversalis muscles and the peritoneum forming the inguinal wedge, advanced through the abdominal wall, first outside and then in front of the rectus. In this way the inguinal canal was formed, or rather preformed. The passage of the inguinal wedge was determined, so far as could be concluded anatomically, by a local development of lymphatic sinuses. Dr. Florence Fabin had shown that in the pig embryo the lymphatic sinuses budded out from the veins in the groin and uniting with other areas of lymph vessels completed the lymph vessels for the abdominal boundaries. Dr. Hart had found the same in the kangaroo. It was to the outside of, and through, this lymphatic area that the gubernaculum passed. The next stage was that this pre-formed inguinal canal grew up around the testes, thus inclosing it; and finally the testis passed into the scrotum, which was at first solid but which became pre-canalised by the advancing inguinal wedge in the same way as the inguinal canal. The testis passed in by a series of accommodation changes perhaps aided, as Frankl stated, by the ultimate shrinkage of the gubernaculum. The lower insertion of the gubernaculum was in all mammals into a mammary area, and whatever the reason of the ultimate passage of the testes into the scrotum they passed into a mammary area. The various stages of the formation of the inguinal canal and scrotum were demonstrated on serial sections of marsupial and human embryos, the latter being chiefly taken from the papers of Weil, Frankl, and Bramann. The descent of the ovaries was shown to be less marked and depended mainly on the round ligament; the round ligament represented its analogue the gubernaculum, and was only equivalent to it at the stage when the testes were in the abdomen undescended. The ovarian ligament was represented in the male by the caudal ligament of the testis.

Dr. BERRY HART also gave a demonstration on Mendelism in the Differentiation of the Human Genital Tract and of Sex. The paper was an attempt to prove that sex had differentiated by two of Mendel's laws—Gametic Segregation and Dominance. The clue to this was to be found in the constitution of the genital tract, inasmuch as each had in it a potent segment characteristic of its own sex (ovary, uterus, vagina, in the female; testis and phallus in the male); and a non-potent (epoöphoron in the female; and appendix testis and prostatic utricle in the male), characteristic of the opposite sex. This was regarded as showing that in the formation of the tract the law of dominance of Mendel had been followed. The human fertilised ovum (zygote) was thus considered to be an impure dominant in Mendel's sense. The origin of this must be sought in the union of gametes (spermatozoa and ova), each necessarily of two kinds—viz., a dominant and recessive ovum and a dominant and recessive spermatozoon. The genital tract had its structure made up of unit-determinates (i.e., results), and these were represented in the zygote by causal "determinants." The zygote had thus "determinants" exactly causal to the "determinates" of the genital tract. The determinates were "potent" and "non-potent," or, better, "dominant" and "recessive" in Mendelian phrase. The determinates in the ovarian and testicular dermoids were then analysed according to the researches of Wilms and Okhubo, and reasons given for considering such, which never had dominant genital organs represented in them, as being derived from recessive ova or spermatozoa, as the case might be, which had retained their power of developing like a zygote. The primitive germ cells from which the ova and spermatozoa arose were considered to be really zygotes, which lost their power of developing as such after undergoing spermatogenesis and oögenesis respectively to form the gametes. Fertilisation was considered to be a "crossing" or variation of gametes—i.e., of a dominant ovum with a recessive spermatozoon, giving a female zygote, or of a dominant spermatozoon and recessive ovum to form a male zygote. Sex was thus considered as being determined at fertilisation and not afterwards. The term "holophyte" was to designate an "adult" form. A brief account of the elements of Mendelism was given at the beginning of the paper.

The PRESIDENT, Dr. J. W. BALLANTYNE, Dr. A. H. F. BARBOUR, Dr. W. FORDYCE, Dr. J. RITCHIE, Dr. E. F. ARMOUR, and Dr. G. KEPPIE PATERSON discussed the papers, and Dr. BERRY HART replied.

ROYAL ACADEMY OF MEDICINE IN IRELAND.

SECTION OF STATE MEDICINE.

The Care and Control of the Feeble-minded.

A MEETING of this section was held on Feb. 5th, Dr. W. R. DAWSON, the President, being in the chair.

The PRESIDENT read a paper entitled, "The Irish Recommendations of the Royal Commission on the Care and Control of the Feeble-minded," in which he gave a short account of the chief recommendations. In the discussion which followed,

Mr. LOUIS KELLY said that while past and present inspectors of lunatics were exclusively medical men there was no provision in the law as it stood that those posts should be compulsorily allocated to medical men. In England there were legal inspectors who had done good work and he objected to the exclusiveness of the recommendations in that respect. The recommendations also proposed to make permanent the present local committees which controlled the asylums in the country. He had no great veneration for a scheme by which so much control and authority were vested in men who had absolutely no training or qualification for the duties imposed on them. Such committees had done and were doing things which no person who was interested in the well-being of the insane could justify. Their very irresponsibility might be taken as an excuse for acts, such as violence to patients, which they had condoned. He objected to the proposed multiplicity of control which only perpetuated one of the fatal defects of the present lunacy system of administration in which there were nine bodies which had a certain amount of power and authority. He could not, however, conceal from himself that the report was a marked advance, and its generosity towards Ireland was one of its outstanding characteristics.

Mr. R. R. LEEPER said that the subject of the care of the feeble-minded and the degenerates of the country was inseparable from Poor-law reform and the latter would have to come first. In the workhouses, as at present constituted, all the factors that made for degeneracy in the population were being run by State aid. If they reformed the workhouses they would prevent the propagation of degenerates and control the feeble-minded. Mr. Leeper said that he was old enough to have given written and verbal evidence before the Committee appointed by the then Lord Lieutenant of Ireland in 1891. The recommendations of this Committee were pigeon-holed and were never given any effect to because they ignored the legal difficulties of the subject and nothing had been done since to alter or to amend the Irish lunacy laws. The chief difficulty would be in controlling the feeble-minded, who numbered twice as many as the idiots and imbeciles together and who were capable of doing much more injury to the race than the latter. It would be regrettable if they had to depend for the control of the demented and degenerate on the will and whim of justices of the peace, one of whom had refused to commit an obvious lunatic who the next day killed a farmer.

Dr. R. B. MCVITTIE said that the question of teachers for the feeble-minded was a central point. He was satisfied that there were many children in whom intelligence developed late, and that such children, if suitably handled by properly trained teachers, might become useful members

of the community. Most of them were ruined in schools. They would be getting something done if they pressed on the Government the importance of selecting teachers with greater care as regards their physical training. The propagation of degenerates extended beyond the workhouses.

The PRESIDENT said that he was of opinion that the ideal method of dealing with the feeble-minded and every other class of mentally defective would be to make the whole thing a national service. He thought, however, that it would now be impossible to get rid of the control of the county councils, and that the recommendations provided for their proper subordination to the central authority had the power to stop the grant if everything was not satisfactorily carried out. The number of defectives in workhouses was very large and the treatment of their mental condition was about as bad as it could be. Many inmates of prisons were drawn from the feeble-minded; almost always they became alcoholic when thrown into criminal associations and speedily went from bad to worse. The average of previous convictions for Dublin defectives—who constituted 11 per cent. of the inmates of the prisons—was nearly 18. Such facts showed the necessity for interference, and one of the advantages to be derived from any far-reaching system of control would be the placing under detention of women during the child-bearing period, which would diminish, and probably extinguish, the supply of defectives.

SOCIETY OF MEDICAL OFFICERS OF HEALTH.—A meeting of this society was held on Feb. 12th, Mr. E. Sergeant, the President, being in the chair.—A portrait of Mr. Francis Vacher, a past President of the society, was presented to the society by the members of the North-Western branch.—Dr. T. H. Craig Stevenson, the principal school medical officer for the county of Somerset, read a paper upon the Administration of School Medical Inspection in County Areas. He dealt with the subject under three headings: (1) preparation for inspection; (2) conduct of inspection; and (3) tabulation and utilisation of the facts recorded. The provision of separate weighing machines for each school was advocated as being less costly in the long run than sending machines from one school to another; moreover, an interest on the part of teachers and pupils would be stimulated if records of weight could be taken in the intervals of the inspector's visits. On the question of allowing the teacher to make certain records, the method suggested was to permit the teacher to make all the entries in pencil relating to cleanliness, clothing, and mental capacity. The inspector thus had before him the teacher's report of the child's usual condition and considered this as well as his own observations of the child's condition at the moment of inspection in making the final entry in ink. The difficulties attending a further inspection of children whose vision is below 6/9 were dealt with at some length by Dr. Stevenson. In rural districts more especially the difficulties were considerable and as a rule all that could be done was to advise the parents to consult an ophthalmic surgeon. In Somerset an arrangement had been made which is regarded as satisfactory. A full-time officer had been appointed who had had considerable experience in ophthalmic work, and while undertaking the ordinary routine inspections in certain districts he will also be available as "school oculist" for the whole county. Eye-testing centres are to be established in conveniently situated schools to which children found to require further examination will be sent to meet the specialist who will, if necessary, prescribe spectacles which a contract will enable the county council to sell to the parents at a cheap rate, or in certain cases they may be provided without any charge. To the correct tabulation of the records obtained by medical inspection Dr. Stevenson attached a great deal of importance. He urged the necessity for keeping the tabulation well in hand so that results might be seen periodically by the mere process of addition. These results if ascertained at short intervals would be a means of checking the standards of different inspectors; for example, if the returns from one district showed that 45 per cent. of the children had verminous heads compared with only 5 per cent. in an adjoining district there would be reason for suspecting laxity on the part of one of the inspectors.—Dr. S. Barwise referred to the importance of teaching mouth-breathing, and instanced one district where a nurse had instructed the children in the proper method of breathing, with the result that there was a noticeable absence of cases of adenoids or enlarged tonsils.—Dr. F. E. Fremantle considered that the time had come to make a definite pronouncement as to the necessity for appointing in every village a nurse-midwife, and he thought that they should press for the formation of a county nursing association wherever one did not already exist.—Dr. W. H. Symons advocated a more uniform system of abbreviations on the record cards in view of the interchange of cards when children migrated from one district to another.—Mr. W. J. Butcher said that in Bedfordshire he obtained a great deal of valuable assistance from the teachers, and he encouraged the attendance of the parents, from whom he received information which was of great service.—Dr. J. Kerr expressed a fear that the inspections might develop into a mere collection of statistics, in which case it was very doubtful whether the work was worth doing. He advocated the appointment of a person in infant schools who should not be a teacher but more of a nurse. Her services could be utilised to keep certain records in the upper schools and to help in the actual inspections.—Dr. W. Butler deprecated the casting of any doubt upon the necessity for the inspections. He hoped the work was not going to be handicapped by unnecessary clerical work.—Dr. J. T. C. Nash agreed as to the desirablity of utilising the services of the village nurse and suggested that she might be paid on the provident dispensary principle.—The President insisted that sufficient attention was not given to preventable diseases occurring amongst school children, and he considered that the sanitary surroundings of schools were not sufficiently looked after.

ÆSCULAPIAN SOCIETY.—A meeting of this society was held on Feb. 19th, Dr. Alexander Morison, the President, being in the chair.—Dr. Leonard L. B. Williams read a paper on the Cardio-vascular Disturbances which arise at or about the Menopause, of which the following is a summary. At an ordinary menstrual period the uterus and its appendages pass through a phase of increased functional activity which necessitates an increased blood-supply to these organs. The tributary arteries accordingly dilate and in obedience to a well-recognised law there is a compensatory vaso-constriction in certain other vessels which are probably those of the skin. Hence it is evident that anything which profoundly alters the balance of blood pressure upon which the menstrual flow depends will have for one of its results the cessation of that flow. Menstruation is essentially a preparation for reproduction and if impregnation fails to take place there is what is called an organic disappointment; the blood accumulated in the peri-uterine vessels for the nutrition of the fœtus is discharged and the preparatory process is immediately recommenced. In the continued absence of fertilisation and of pathological disturbances this cycle is repeated regularly from month to month till the menopause comes to proclaim that the reproductive period is at an end. Menstruation is an exceedingly complicated phenomenon, to the production of which the internal secretions of various organs would seem materially to contribute. The most important of these organs is, of course, the ovary, and certain facts have now been established in connexion with the internal secretion of the ovary which may be summarised as follows: (*a*) That it is essential not only to the development but also to the preservation of the genitalia. (*b*) That it causes a vaso-dilatation, chiefly of the uterine and peri-uterine vessels but also to some extent of the vessels in other parts, notably those in the nose and larynx. Coryza is a by no means rare accompaniment of normal menstruation. (*c*) That it exercises an antitoxic effect upon matters excreted at a normal period, for it has been shown that menstrual discharge contains four times as much iodine as normal blood. (*d*) That it gives rise to an increase of the output of calcium salts from the body. (*e*) That it has physiological relations with the internal secretions of certain other glands, some of which relations appear to be antagonistic, some complementary, and others of a nature not yet ascertained. At the menopause these activities cease, and the cardio-vascular system is called upon to adjust itself to the profound change which is thus effected. The menstrual hæmorrhage must mean a monthly relief to the strain of the heart and arteries; a monthly excretion of toxins must purge the blood of impurities, and monthly vaso-motor exercises of dilatation

and constriction practised over large areas will maintain, as it were, the arteries in good training. If we assume that in a large proportion of cases the menopause does not occur smoothly, then it is assuredly to the circulatory system we must look for the earliest and most striking evidence of roughness. Women at the menopause suffer from a large number of distressing symptoms. Some of these are merely subjective, whilst others are objective, but whether they be the one or the other they are always quite definitely circulatory. The mechanism of these disturbances is still for the most part obscure, but we have in the manometer a method of distinguishing between at least two very dissimilar classes, and a means therefore of approaching the treatment of these cases with some degree of intelligence.—Dr. B. G. Morison read notes of a case of Melæna Neonatorum. On the morning of the fourteenth day after the birth of a healthy child the diaper was found to be "full of blood" and almost immediately afterwards the child died. The post-mortem examination showed that the gall-bladder contained some blood clot as well as dark bile. The stomach contained bloody mucous fluid. The small intestine was entirely filled from end to end with dark bloody fluid which escaped on puncture. The suprarenals were not distended and looked pale, but on opening them a little dark blood was found in both. Microscopically they showed extreme congestion of the medulla but no actual extravasation of blood. The capillaries in the medulla were widely dilated and the appearance suggested some possible interference with the normal blood return from the organs. It did not suggest an acute condition but rather one of some standing. The question arose whether this condition was merely part of a general hyperæmia which overflowed in the alimentary tract or whether it could have exercised a causal influence on the latter occurrence.

BRADFORD MEDICO-CHIRURGICAL SOCIETY.—A meeting of this society was held on Feb. 16th, Dr. T. J. Wood being in the chair.—Dr. J. C. Sykes read notes of a case of Pregnancy complicated by a large Ovarian Tumour. The patient, aged 26 years, was married at the age of 21 years. She had a miscarriage at the third month, five months after marriage. The next pregnancy resulted in a stillborn child 19 months after marriage. One year later her second child was born at full term and is now living and quite healthy. "The third child," continued Dr. Sykes, "that in which we are interested to-night, was born in June, 1908. At the sixth month of the pregnancy the mother consulted me about her condition, complaining of a good deal of pain in the left iliac region. Her size chiefly attracted her attention. The abdomen was more like a case of twins at full term. Being engaged at an operation at the time of her confinement, Dr. Sutherland kindly attended for me and a child was born in a natural way without any trouble. I saw her next day and found her abdomen enormously distended. I watched the case very closely and during the first ten days the abdomen became more and more distended, afterwards remaining stationary. Pressure symptoms gradually developed and she began to get œdema of the legs and vulva. I decided to operate and on Sept. 3rd an incision was made in the abdominal wall extending nearly from the umbilicus to the symphysis. The abdominal wall was very thin, almost like a piece of brown paper. Soft adhesions were found everywhere. These were broken down, causing a little hæmorrhage which was rather troublesome. The tumour now exposed was of a greyish-brown colour. On puncturing it with a large trocar nothing escaped. I therefore made a larger incision with a scalpel and a large quantity of semi-fluid jelly rolled freely out. The tumour was now brought out of the abdomen and the pedicle ligatured. The cavity was now sponged out and the abdomen closed. The tumour weighed 33 pounds. The after-history of the case was uniformly good. The patient went home at the end of a month feeling very well and having gained 8½ pounds in weight. The special features of the case are the size of the growth and its rapid development, together with the circumstances that a full-term child should be born while this huge growth existed in the abdomen." Dr. Sykes then briefly reviewed the literature of these cases and discussed the treatment, which he thought should be surgical interference at the earliest possible moment.—Dr. R. A. R. Lankester read notes of a case of Pyelitis of Pregnancy. The patient, aged 26 years, a primipara, was four and a half months pregnant. She was seized suddenly in the night with severe pain in the back and right iliac region. The bowels were constipated and she had severe vomiting. A copious enema gave instant relief to the symptoms. The temperature was normal. Two days later the former symptoms returned in all their severity. Her condition suggested appendix trouble or twisted ovarian tumour. The urine was dark in colour and had a cloud of albumin, but no sediment was noticed. Mr. J. Basil Hall was consulted and it was decided to watch the case. After 24 hours the acute symptoms subsided. On the second morning after this the urine had a thick sediment which on microscopic examination was found to be pus. A catheter specimen was obtained from which Dr. F. W. Eurich made a bacteriological examination and found a pure culture of colon bacillus. For a few days the patient had several of these severe attacks of pain and vomiting. During one attack the pain was on the left side, and the left loin appeared distinctly full and there was some swelling of the abdomen on that side. The kidney area was acutely tender and the left side of the abdomen was rigid. The quantity of urine passed was frequently up to 60 ounces, always acid, and contained pus in large quantities. There were no symptoms of cystitis at any time. As regards treatment, rest in bed and enemas undoubtedly gave relief. She had light diet and fluids in large quantities. Urotropin had no effect and she continued to have attacks on and off up to her confinement at full term, which was normal in every way. She is now apparently in perfect health and has regained her normal weight. There was never any rise of temperature. The diagnosis and treatment were then discussed. All experience pointed against any surgical interference as these cases tend to spontaneous recovery.

NORTH OF ENGLAND OBSTETRICAL AND GYNÆCOLOGICAL SOCIETY.—A meeting of this society was held at Liverpool on Feb. 19th, Dr. J. W. Martin (Sheffield), the President, being in the chair.—Dr. J. J. O'Hagan (Liverpool) showed a Fibromyomatous Uterus with Bilateral Ovarian Dermoid Cysts which had been removed by total hysterectomy.—Dr. J. E. Gemmell and Dr. H. Leith Murray (Liverpool) showed: (1) Myxo-fibroma of the Vagina; and (2) Sarcoma of the Great Omentum which had presented a soft solid freely moveable tumour in the left hypochondrium. It could be pushed into the pelvis and had simulated a dislocated spleen; it was easily excised. There was no ascites and the other abdominal organs were normal.—Dr. D. Lloyd Roberts (Manchester) showed a specimen of Cystic Fibromyoma of the Uterus and read the notes of a case of Cæsarean section performed before the onset of labour on account of a flattened pelvis (conjugata vera, three inches) for which craniotomy had been performed on three occasions. Involution of the uterus was slow and on the eighth day symptoms of sepsis appeared. The uterus was explored and a large clot of blood was removed. Recovery was then uninterrupted. In closing a discussion Dr. Lloyd Roberts stated that he always, if necessary, dilated the cervical canal before suturing the uterine incision, that ergot was given during the operation, and that in his opinion the retention of blood clot was due to pressure of the lower uterine segment against the promontory.—Dr. Lloyd Roberts also showed a Recurrent Tumour of the Vagina, enucleated piecemeal, from a woman aged 43 years. Microscopically it consisted chiefly of fibromyomatous tissue, though one part was suspicious of sarcoma.—Dr. Gemmell stated that nine years previously he had enucleated a vaginal growth of the size of a Jaffa orange from this patient. Clinically he had considered it a sarcoma, but microscopically it had been described as a degenerating fibroid.—Dr. G. W. Fitz-Gerald (Manchester) showed the specimen and read notes of a case of Primary Carcinoma of the Vagina occurring in a nullipara aged 26 years. The ulcerated growth, which occupied the left fornix, was freed from its vaginal attachments and then removed together with the uterus by the abdominal route. The patient made a good recovery. Section showed that the growth—an epithelioma—though invading the cervix, was not connected with the mucous membrane of the cervical canal. But it may possibly have arisen from the epithelial covering of the portio.—Dr. H. R. Clarke (Manchester), in a paper on Cavernous Conditions occurring in the Uterus, pointed out that the myometrium of the infantile uterus consisted of a network of fibro-muscular tissue inclosing large cavernous spaces which are lined by endothelium and filled in most of

his specimens with blood. During development arteries extended from the fibrous trabeculæ into these spaces, invaginating the venous wall and producing, in the early stages, a condition which Dr. Clarke likened to the corpus cavernosum of the penis. The arteries grew more rapidly than the venous spaces and so, by this process of *condensation*, the dense condition of the adult myometrium was reached and the arteries of the adult uterus came to be surrounded by venous spaces. Dr. Clarke suggested that the angeiomatous changes seen occasionally in uterine fibroids might possibly be dependent upon this developmental process.

NOTTINGHAM MEDICO-CHIRURGICAL SOCIETY.—A meeting of this society was held on Feb. 17th, Mr. J. Mackie being in the chair.—Dr. A. Stanley Green (Lincoln) read a short paper on the Uses of Bier's Hyperæmia in General Practice. This was nature's method of bringing up reinforcements and was valuable both for the relief of pain and also in septic cases; the need for repeated fomentations was done away with, while much smaller incisions would suffice where these were necessary. Passive or venous hyperæmia was produced by suction glasses or rubber bandages as shown, and instances were given of the value of such treatment in septic wounds of the limbs and fingers, of the scalp, facial erysipelas, chronic ulcer of the leg, orchitis, gonorrhœal and tuberculous arthritis, mumps, mastitis, axillary abscess, boils, and carbuncle. Where possible it was also advisable to prepare a vaccine from the patient's own pus and to utilise this in the treatment.—Dr. W. T. Rowe read a short paper on Indigestion in Children Beyond the Age of Infancy, in which he traced the various symptoms to which indigestion might give rise in children, and after alluding to the marked idiosyncrasy exhibited by certain children to certain articles such as eggs or porridge, criticised the over-use of certain foods, such as bread-and-butter, potato, porridge, brown bread, fruit, salt meat, and root vegetables.—Dr. C. H. Allen showed a case of Marked Hypertrophy of the Penis apparently due to Lymphatic Obstruction in a collier, aged 44 years, who had received a severe blow in the groin six months previously. The condition had been materially relieved by circumcision, but at one time the penis had measured eight inches in length and eight inches in circumference.—Dr. Thomson Henderson showed Sections of an Eye in which a magnetic fragment of steel had been imbedded more than four years; also other specimens showing pigmented and unpigmented sarcoma of the choroid.—Dr. R. B. Purves (Lincoln) showed a Fibro-sarcomatous Tumour weighing 6½ pounds in the testicle which was removed from a man aged 70 years two years ago without recurrence; an Appendix attached by two shroud-like adhesions to the posterior wall of the bladder in a man, and prior to removal causing micturition at regular and definite intervals; also Fallopian Tubes, the subject of Chronic Inflammation in a girl aged 20 years, and removed on account of fistulous pyuria occurring through the posterior wall of the bladder and leaving a urinary fistula after operation.

BRIGHTON AND SUSSEX MEDICO-CHIRURGICAL SOCIETY.—A meeting of this society was held on Feb. 4th, Mr. R. F. Jowers, the President, being in the chair.—The President showed a very large Fibroma of the Ovary successfully removed by operation.—Dr. A. M. Collcutt showed a case of Osteitis Deformans, which began 15 years ago in a young man; radiographs showing the density of the bone in the femur and tibia were exhibited by Mr. P. Lake Hope.—Dr. E. Hobhouse showed among other cases a boy who, after a supposed attack of influenza, developed Double Facial Paralysis and Paresis and Wasting of the Tongue; there were also inspiratory stridor and weakness of the abductors of the larynx. He considered it to be a case of polio-encephalitis.—Mr. W. Watson Griffin showed a case of Word Blindness in a boy, aged 10 years, who could not be taught to read; though he could name any letter at sight and read short words he could not understand a short sentence in words of one syllable.—Dr. R. Sanderson read notes of a case of Renal Calculus in a lady, aged 34 years. She had had pain preceding and during the catamenia round the waist and in the right side. She was often sick. There was no tenderness in the abdomen, the kidneys were not moveable, nothing abnormal was felt per rectum, and the urine was normal. A month later a trace of blood appeared in the urine but no pus. An x ray photograph by Mr. Hope then showed a large stone in the right kidney which was successfully removed by Mr. Jowers and found to consist of two pieces, weighing together 1¾ ounces.—Dr. D. G. Hall read a paper on Acromegaly.

ROYAL MEDICAL SOCIETY OF EDINBURGH.—A meeting of this society was held on Feb. 12th, Dr. Mark S. Fraser being in the chair, at which a debate with the members of the Physiological Society took place. The motion before the meeting was:—

That in the opinion of this House the body processes, dependent upon the internal secretions, can, in the absence of these secretions, be efficiently regulated by the administration of the extracts of these internally secreting organs.

Dr. D. M. Barcroft moved the affirmative, devoting most of his speech to the subjects of cretinism and myxœdema. Dr. Cramer moved the rejection of the motion and was seconded by Mr. Bell. Dr. R. G. Gordon seconded Dr. Barcroft. Dr. G. G. Jolly, Dr. D. Chalmers Watson, and others also spoke. The motion was eventually rejected by 30 votes to 18. Dr. Edwards read a dissertation on Psychotherapy, which was listened to with attention and unanimously accepted by the society.—At the meeting held on Feb. 19th, Dr. A. Fergus Hewat being in the chair, Mr. J. Graham gave a demonstration of Bier's Method of Passive Congestion and gave the results of his wide experience of this form of treatment. He had found it of the highest value both as a curative and as a prophylactic agent. It was of particular value in situations where it was easy to produce œdema. Some interesting cases were shown bearing on the subject.

Reviews and Notices of Books.

Gunshot Wounds. By C. G. SPENCER, M.B. Lond., F.R.C.S. Eng., Major Royal Army Medical Corps; Professor of Military Surgery, Royal Army Medical College. London: Henry Frowde, Oxford University Press; and Hodder and Stoughton. 1908. Pp. 287. Price 5*s.* net.

WE have only now received this work, although it was published in June of last year, and we hasten to record the impression that it has made on us, for the subject is of great importance. At the present time the wounds which are inflicted by sword and bayonet have lost much of the importance which they once possessed, for now they form but a small proportion of the wounds received in war; far more important as weapons of offence are bullets and artillery missiles, and it is well that a country like our own which is seldom absolutely at peace for long should have a convenient manual on gunshot wounds for the use of military surgeons. Even surgeons in civil practice see something of bullet wounds, though for the most part these are inflicted by the small calibre bullets of what may be termed amateur pistols or by shot guns, and the wounds are often less severe than those met with in active service; they are at all events different in character.

In war the surgeon works under difficulties unknown to the surgeon in civil life. Many of the methods and procedures which are of the greatest use in times of peace may be utterly impracticable under the stress of war, and Major Spencer points out that the military surgeon should study in times of peace to adapt his methods to the requirements of war. He may avail himself of every convenience obtainable, but he must learn to look upon these as luxuries and not as necessaries, and he must be prepared to work if need arises with the most simple means. At operations he should learn to do without skilled assistance or even without any assistance at all, and if he practises performing without help operations such as radical cures of hernia, in situations where all forms of aid are within his immediate grasp, he will learn much that will help him when he is suddenly called upon in the field to treat an urgent case unaided. The military surgeon should be

able to design and to make his own splints, to sharpen his scalpels, and to adjust minor defects in instruments. Ligatures and sutures should be simple, and Major Spencer considers that for unabsorbable sutures plain linen thread is as good as any. For septic wounds absorbable ligatures are preferable as they do not tend to keep sinuses open, and he considers that iodised catgut is the most suitable. In the Russo-Japanese war, however, only silk ligatures were used on both sides.

The chapter dealing with the mechanics of projectiles should prove of interest. The author shows the great effect on the velocity of a bullet which is produced by the shape of its head. A pointed bullet meets with only about half the resistance encountered by a bullet that has no point. The wounding power of a bullet depends on its energy and the facility with which it converts its energy into work on striking. The energy is very great at short ranges and diminishes rapidly as the range increases. The facility of the conversion of the bullet's energy into work depends partly on the size of the bullet, partly on its liability to deformation, and partly on the resistance encountered. If the resistance is sufficient to stop the bullet, practically all its energy will be converted into work. Soft-nosed bullets will cause a much more serious wound than one completely covered with a hard coat, for they "mushroom" easily. The present-day bullets are all much smaller than formerly; the diameter varies from 6·5 millimetres to 8 millimetres. The British weapon is the Lee-Enfield and the bullet has a diameter of 7·7 millimetres. The Martini-Henry bullet's diameter was over 11 millimetres. The tendency at the present time is to diminish the weight of the bullet without diminishing its diameter, and also to sharpen the point. The effect is to increase the velocity of the projectile.

The experiments made some years ago on dead bodies to determine the effects of small-bore bullets were misleading, for actual experience in war has shown that the injuries produced are not so severe as the experiments indicated. The wound of entrance is often smaller than the bullet because of the elasticity of the skin, but when the skin is well supported, as over a bone, the opening tends to be somewhat larger. When a bullet is deformed before striking, as by ricochet, or when a bullet chances to hit sideways, very irregular skin wounds may be produced. The wound of exit may so closely resemble the entrance wound that even experienced surgeons may be unable to distinguish the two, but if of the two openings one is small and round and the other is slit, starred, or valvular, the latter is the wound of exit, but in wounds of warfare, contrary to what prevails in civil crime, it does not often signify from which direction the injury came. The course of a small-bore bullet is straight from entrance to exit when the parts are put into the position they had when hit; the small-bore bullet is never deflected from a straight course except by striking bone and even then seldom to any great extent.

As to the structures wounded, it is usually easy to say that large organs, such as the lung or liver, have been wounded, but it is often quite impossible to diagnose whether the bowel, the spleen, the kidney, or an artery or nerve has been wounded or not, even though it may lie directly in the path of the bullet. It is rare for the modern bullet to lodge in the body, and in the Russo-Japanese war only about 4 per cent. of rifle bullets remained in the body. Portions of clothing are not often carried into the wound, though the material makes some difference. Wool is more often carried in than cotton. A shrapnel shell consists of a hollow case containing round leaden bullets; the shell explodes by a time fuse and the contained bullets travel on with the velocity which they already have. Shrapnel bullet wounds form about 10 to 20 per cent. of the total, and as the bullets are round and large and travel slowly they cause more irregular wounds and often lodge in the body.

The pain produced by a bullet wound varies greatly. Sometimes during excitement the man may have no knowledge that he has been struck. The pain is generally sharp and stinging or burning, and the wound of exit hurts more than the wound of entrance. When a bone is struck there is intense pain at first, followed by dull aching. It is exceptional for the pain of a bullet wound to be very intense. The amount of shock also varies greatly; it is least during excitement, especially during victory; but extensive wounds may be inflicted without any shock at all, and Major Spencer quotes several striking cases of this. An officer felt "a graze in the back" from a bullet but continued to fight. Some hours later, to his astonishment, the bullet was found to have passed from its entrance in the left loin as far as the middle of the inner side of the thigh, whence it was removed. The great majority of small-bore bullet wounds may be considered aseptic in the first instance, except in the comparatively rare cases where the bullet has carried in portions of clothing or wounded a portion of bowel. Death on the field of battle is chiefly due to internal hæmorrhage and less commonly to external hæmorrhage. Major Spencer describes the wounds of the various tissues, and especially fractures of bones; he discusses wounds of the thorax and abdomen. It is interesting to note that a small-bore bullet causes scarcely more injury to the lung than would be produced by a moderate sized aspirating needle, but at the root of the lung injury to the large vessels may cause speedy death.

We make no attempt to follow the author through the remainder of his book, but it is everywhere of great surgical interest and we feel sure that it will be read not only by military surgeons but by many surgeons in civil practice who will derive both instruction and pleasure from the perusal of this interesting book.

A Dictionary of Medical Treatment for Students and Junior Practitioners. By ARTHUR LATHAM, M.A., M.D. Oxon., M.A. Cantab., F.R.C.P. Lond., Physician and Lecturer on Medicine at St. George's Hospital, &c. London: J. and A. Churchill. 1908. Pp. 325. Price 6*s.* 6*d.* net.

THIS little book is addressed to students and junior practitioners, and as it was written at the request of an experienced firm of publishers we must suppose that there was a demand for such. We should otherwise have felt some doubt as to whether students, with their attentions fixed on examinations, were inclined to read much about treatment beyond what they found in their general text-books; while young practitioners have need of books as full as, or fuller than, those used by their elders of greater personal experience, and their work is not confined to pure medicine so that they might well prefer to spend their money on one of the larger works of less restricted scope. We are not concerned with debating whether a different sort of book would meet different needs, but only with saying how far in our opinion the author of this book has succeeded in what he has tried to do. And we are sure that a house physician on first taking up his duties would find this work a valuable companion. The author has acquitted himself well of his task as laid down for him. We have not found any omissions in the list of subjects here alphabetically arranged, and the advice given is clear and practical. Here and there we may feel surprise at an omission of some special remedial measure, as of serum treatment for cerebro-spinal meningitis, or be inclined to question the advice given in individual cases—but there is room for much divergence of opinion in this field. Now and again the different articles seem a little contradictory, as in the matter of

renal calculus, for we are told in one place that as soon as a diagnosis of a stone is made the patient should be submitted to operation, in another that he should first undergo a course of medicinal treatment and only be treated surgically if these fail. But these points for cavil are few. We are a little doubtful whether young practitioners would be wise to undertake Schott-Nauheim treatment in cardiac cases, as they are apparently here expected to do, without consultation with someone experienced in this method; but they will no doubt be none the worse for a little knowledge of the principles of the method. A few pages are devoted to treatment by vaccines, and it is held that these act beneficially when administered by the mouth or the rectum as well as when given hypodermically. The moderate price of the book is a strong point in its favour and its clearness and simplicity should make for popularity.

Studies in Puncture-Fluids: a Contribution to Clinical Pathology. By O. C. GRUNER, M.B. Lond., Clinical Pathologist at the General Infirmary, Leeds. London: H. K. Lewis. 1908. Pp. 289. Price 7*s.* 6*d.*

THE newer methods of physico-chemical research, such as cryoscopy, have within the last few years been applied to the examination of blood and urine, and the present work is an attempt to apply some of these methods to puncture-fluids in order to supplement the knowledge obtained from the chemistry of these fluids. In this way an insight into the metabolic processes whereby these fluids are produced and the decomposition products of proteids present in them may be obtained. The excessive amount of chlorides in nephritic effusions as compared with back pressure effusions is an example of the value of chemical investigation. The fluids which have been studied are (1) those that occur in large serous cavities—e.g., pleura and peritoneum; (2) joint effusions; (3) cerebro-spinal fluid; and (4) fluids from cysts. The cytological characters are in all cases carefully investigated,

In Section I. an elaborate account is given of the complex methods used for the chemical examination of these fluids. The methods, as those for the separation of the globulins, albumins, albumoses and peptones, mono- and di-amino acids, purins, urea, glycoproteids, pseudomucin, lecithin, and so on, are all more or less highly technical procedures, and require on the part of the investigator an expert chemical knowledge of these processes. The most abundant constituent in puncture-fluids is albumin, and in describing methods for its removal from fluids the author lays stress on the absorption method of Michaelis and Rona who use mastic for this purpose. Elaborate tables are given for the separation of each of the substances enumerated and also for detecting and estimating ferments in puncture-fluids. We presume that on p. 70 the author means ferments "in" puncture-fluids, though he uses "on."

Section II. is devoted to the physico-chemical methods, including osmotic pressure and how to calculate it, with a theoretical discussion on electro-conductivity, and the effect of mixtures on the freezing-point depression and on electro-conductivity. The critical solution point method recently introduced by W. R. Gelston Atkins for the examination of urine in place of cryoscopy for diagnostic purposes is described, and it is stated that it is one that is likely to be of interest in the study of those puncture-fluids which do not contain much albumin. A careful description of viscosity and the concentration of the hydrogen ions, as well as of refractometry, completes this section of the work (pp. 91–141).

Section III. (pp. 141–195) is devoted to a description of the properties of various puncture-fluids, their physical characters and chemical composition.

Section IV. (pp. 196–217) deals with the very interesting and important question as to the differential diagnosis of exudates and transudates, a question that occupies a very important place in clinical pathology. The following and other tests are considered and their respective values are appraised:—Specific gravity—transudates usually have a specific gravity of less than 1020, while exudates have one of more than 1020; amount of total protein—here it is the borderline cases that present difficulty; refractometry, tests for viscosity, and the presence of serosamucin, Rivalta's glacial acetic acid test, tests for the presence of fructose or ferments, and what is most important electrolytic determinations, for it appears that exudates differ essentially from transudates as a rule in their achloride-electrolyte-content. The electrolytic conductivity varies very greatly according to the causation of the effusion. Renal dropsies contain a relatively large percentage of chlorides, while exudates due to severe inflammatory change contain but few. This section is one of the most novel and important sections in the book.

The chapter on Cyto-Diagnosis, a subject that has attracted attention only since 1900, is short but suggestive and is illustrated by two plates. It appears that a monograph on this subject by Königer (1908), a work that "can be thoroughly recommended for its clearness and comprehensiveness to all who are interested in the subject," makes it unnecessary for the author to elaborate this factor.

The proof of the pudding is the eating of it. The author devotes Section VI. (pp. 236–251) to "special cases"—18 in all—and as the greatest difficulty attends diagnosis of the effusions of either chest or abdomen, especially in medical cases, the application of the facts and methods recorded in previous sections is illustrated. Perhaps a reader would do well to begin with this section. It gives a clue to the relative values of the various and complex methods set forth in the text.

The appendix bristles with numerical and the ever-necessary ready-reckoning tables, while the bibliography of the subject occupies 12 pages.

This is an excellent monograph on a most difficult subject. The author is a pioneer in the right direction. The day is already at hand when both physician and surgeon in certain cases require the aid and services of a well-trained clinical pathologist—an officer that ought to find a place on the medical staff of every large hospital in the kingdom.

The Rectum: Its Diseases and Developmental Defects. By Sir CHARLES B. BALL, M.Ch. Dub., F.R.C.S. Irel., Hon. F.R.C.S. Eng., Regius Professor of Surgery in the University of Dublin; Surgeon to Sir Patrick Dun's Hospital; Honorary Surgeon to the King. London: Henry Frowde; and Hodder and Stoughton. 1908. Pp. 320. Price 30*s.* net.

Sir Charles Ball wrote a book on the surgery of the rectum in 1887 and a second edition of it appeared a few years later, but the progress of surgery has been great within late years and the author felt that more than mere revision was required, therefore he has written a new book on the same subject. In 1902 Sir Charles Ball delivered a course of lectures at San Francisco on Diseases of the Rectum and in 1903 he lectured on Adenoma and Adeno-carcinoma of the Rectum at the Royal College of Surgeons of England. The present work is largely based on these lectures, and the author, in order to keep the book from growing too large, has omitted historical accounts of the evolution of the treatment and obsolete methods of operation.

The work commences with a description of the anatomy of the parts and the author repeats the frequently made statement that the sigmoid flexure is quite unlike a sigma,

but those who make this statement appear to forget that the early form of the sigma is a single, nearly complete, loop like our modern capital C, and the flexure was named after that and not after the later sigma, whether capital or "lower case." The sigmoid notches of the ulna and of the mandible are named sigmoid for the same reason. A very satisfactory account is given of the anatomy of the rectum and the pelvic floor; it differs on many points from that to be found in most text-books of anatomy, but it represents the conclusions of the most recent investigations. For instance, the levator ani is no longer a single muscle but is split up into three portions—the ilio-coccygeus, the pubo-coccygeus, and the pubo-rectalis. The diagrams are useful in assisting the reader to understand the account of the anatomy. It is usually stated that the superior hæmorrhoidal veins, which are connected with the portal vein, anastomose freely with the middle and inferior hæmorrhoidal veins which belong to the systemic veins, and much importance has been attached to this fact as explanatory of the formation of hæmorrhoids in cases of portal obstruction, but the author has not been able to demonstrate by injections any free anastomosis. The causes put forward to explain the formation of piles are many. Sir Charles Ball considers that the erect posture is mainly responsible, though he acknowledges that other factors concur. He has not found any evidence that heredity is of any great importance in the causation of piles; this is opposed to the experience of many surgeons.

In cases of imperforate rectum if there is no evidence that the bowel is near the perineum Sir Charles Ball is in favour of doing a preliminary colotomy to overcome the urgent symptoms of intestinal obstruction with the least amount of risk, and later when the child has gained strength the attempt to restore the bowel opening can be made with a much better chance of success. With regard to the diagnosis of rectal disease we are told that the author places little reliance on specula, for he holds that it is by the sense of touch rather than by sight that disease of the interior of the rectum is best recognised. The treatment of fistula which is recommended is to lay open the fistula, to curette it, and to swab it with liquefied carbolic acid; it is then sutured carefully and usually it heals by first intention. We agree with the author that the names "blind internal fistula" and "blind external fistula" are very confusing and we think that the names which he suggests, "internal rectal sinus" and "external rectal sinus," would be far preferable.

The treatment of cancer of the rectum is still in a somewhat unsettled state, for surgeons are hardly agreed as to the preferable routes by which the growth should be removed. The author has devised a method for perineal excision in cases in which the entire anal canal is free from involvement by the disease, and this operation he considers deserving of trial inasmuch as it should leave full sphincteric control. The operation is as follows. The anal canal is plugged with gauze soaked in 1 in 500 mercuric iodide solution in spirit. A median incision is made from the central point of the perineum to the front of the anus, and another from the back of the anus to the base of the coccyx. The coccyx is removed and the levator ani and external sphincter are split mesially as far as the anus both posteriorly and anteriorly. A finger can now be passed from one incision to the other above the levator ani on each side of the rectum. A stout ligature is passed so as to surround the rectum above the insertion of the pelvic diaphragm and tied very tightly so as to compress the rectum on the gauze plug. The anal canal is now cut through mesially and the two halves are retracted, yet each retains intact its normal relations to the levator ani and its nervous supply. The rectum is thus very fully exposed. The ligature must be cut short in order to avoid its being pulled on. The separation of the bowel can now be accomplished with great ease provided the growth has not extended much into the perirectal tissues. The reflexion of peritoneum may be freely opened and if the pelvic mesocolon is sufficiently long a loop of the pelvic colon may be drawn down and complete extirpation can be performed. The operation is very ingenious and a description of it has not appeared hitherto, and therefore we have quoted the description at some length. Its value must depend on the results obtained, but we have great hopes of it.

We can speak highly of this work and it deserves study by all who have to deal with surgical affections of the rectum, as it represents the view of a distinguished surgeon who has devoted much attention to this subject.

The Ophthalmic and Cutaneous Diagnosis of Tuberculosis (The Cutaneous and Conjunctival Tuberculin Reactions according to von Pirquet and Wolff-Eisner). By Dr. ALFRED WOLFF-EISNER. Translated from the German by BERNARD I. ROBERT. Illustrated. London: John Bale, Sons, and Danielsson. 1908. Pp. 207. Price 7*s.* 6*d.* net.

THE above is the brief title of the work now before us, but on the title-page are several sub-headings. It is indicated that the book contains a discussion of the clinical methods for the early diagnosis of pulmonary tuberculosis, a preface by Professor H. Senator, and an introductory note to the English reader by Dr. C. Theodore Williams. Dr. Williams properly maintains that all means which tend to promote the early diagnosis of tubercle in its various forms are very acceptable to the clinician, as there is no doubt that the chances of arrest of tuberculosis depend largely on its early detection. Though great things have been accomplished by the aid of physical signs, of sputum testing, of radiography, and other modes of examination, there is room for improvement in the methods at the disposal of the physician, and any addition which is trustworthy and easily carried out is welcomed.

Dr. Wolff-Eisner's book is divided into three parts. The first contains a general description of the methods of the employment of tuberculin for diagnostic purposes; the second part deals with the application of the cutaneous and conjunctival reactions in the diseases of children, in dermatology, in ophthalmology, in gynæcology, in psychiatry, and in veterinary science; and the third is concerned with theoretical considerations. The first part is, in our opinion, the most interesting and contains much practical information. The subcutaneous injection of tuberculin for purposes of diagnosis is not advocated; it is asserted that certain dangers are attached to its use, and the reaction, apart from serious results, may induce certain unpleasant symptoms, such as a rise in the temperature, which may frequently be very considerable, lack of vitality, pains in the limbs, various symptoms at the seat of the disease, and severe headache, which may keep the patient in bed several days. The author maintains that these disadvantages are done away with by the application of the local reactions. They do not expose the patient to the danger of being injured or of having his sufferings increased. Further, Dr. Wolff-Eisner points out that they can be used in clinical practice; that they do not require a tedious observation of the course of the reaction; and, most important of all, that they produce reactions just as specific as the subcutaneous tuberculin test.

The cutaneous reaction is first described. The true reaction must not be confused with the slight redness which appears at the site of inoculation about one and a half hours after the tuberculin has been applied. As a rule, this redness disappears after an hour or two and in an inoculation leading to positive results a fresh redness appears after three hours, which does not appear on a

control spot. The redness then increases till it reaches a maximum which in different cases may occur after a variable number of hours, very frequently after between 12 and 24 hours. Three degrees of reaction are recognised: (1) distinct; (2) strong; and (3) very strong. In actual practice there will not be any doubt as to what represents a very strong reaction, and little difficulty will be encountered in distinguishing between the distinct and strong reactions. The reaction can occur in two different ways, according to the author. 24 hours after having reached its maximum—that is to say, altogether 48 hours after the inoculation—it may, under certain conditions, decrease to such an extent that hardly a sign of it is left; on the other hand, it may increase in the course of the next few days. The conjunctival reaction is next described and it is maintained that unfavourable secondary symptoms have never been observed, although the local inflammation is occasionally prolonged and severe.

An interesting discussion is entered into as regards the comparative value and significance of the cutaneous and conjunctival reactions. Dr. Wolff-Eisner is of opinion that the greater clinical value must be attached to the latter. He advises, however, that it is expedient in doubtful cases to employ both tests together, because they complement one another to a very considerable extent. If the cutaneous reaction be positive and the conjunctival be negative he is of opinion that "healed-up" or inactive tuberculous centres may be diagnosed.

The book forms a good and fair criticism on the aids afforded to the diagnosis of tuberculosis by the ophthalmic and cutaneous reactions. Some time must elapse, however, before their true value can be estimated and the experience of numerous observers will be necessary in order that conclusive results may be procured.

LIBRARY TABLE.

A Manual of Practical X Ray Work. By DAVID ARTHUR, M.D. Glasg., D.P.H. Cantab., Medical Officer in Charge of X Ray Department, West London Hospital, and Lecturer on Radiology, West London Post-Graduate College; and JOHN MUIR, B.Sc. Glasg., M.B., Ch.B., & B.Sc. (Public Health) Glasg. London: Rebman, Limited. 1909. Pp. 244. Price 7*s.* 6*d.* net.—Though this work is not exhaustive it is a valuable one on account of its practical teaching in every part of an interesting branch of medicine. Realising that the whole science of radiology hangs on the x ray tube the authors have taken that as their starting-point, and we may safely say that the student who takes the trouble to master thoroughly this part will have little difficulty in gaining a working knowledge of the whole. The various sources of supply are explained sufficiently at length and then follow a couple of chapters on intermediate and accessory instruments. The study of this section explains the difficulty which many have in dealing with x ray apparatus, since the numerous devices more or less necessary of a very technical character are bound to be confusing to the non-technical mind and call for an accurate knowledge of electrical procedure. It also gives rise to a hope that most of these complications will ere long be dispensed with and more simple means discovered for producing the necessary high-tension current. The sections on photography and diagnosis are admirable and a vast amount of valuable information is here at the disposal of anyone who cares to learn. The book closes with a short chapter devoted to x ray therapeutics. It is well arranged and well illustrated and it is sure to attain a popularity which is quite deserved.

"*Truth*" *Cautionary List, 1909.* London: *Truth* Offices. Pp. 99. Price 1*s.*—This little compilation contains more useful information than many an encyclopædia. For it gives in uncomprising language details of the doings of various swindlers and flat-catchers who are enabled to prey on the public owing, in great measure, to the facility with which their advertisements are accorded room in the daily press and in the popular sixpenny magazines. We suppose it is hopeless to expect any Government to give powers to the police, as in Germany, to publish notices of the composition of quack medicines or warnings drawing attention to the uselessness of "deafness cures" or "electric invigoraters." But something should be done, and as two notorious quacks have recently been punished for obtaining money under false pretences, under the powers which the police do possess, it would surely be possible to sweep into the net a few of the more blatant swindlers who figure in this admirable compilation.

JOURNALS AND MAGAZINES.

United States Naval Medical Bulletin. Vol. II., No. 3, July, 1908; No. 4, October, 1908. Washington.—The first of these contains a second paper by Surgeon B. L. Wright, U.S. Navy, on the Treatment of Tuberculosis by Mercury. Of the 40 cases under treatment at New Fort Lyon, Colorado, 28 were improving; the preparation used is hydrargyrum succinimidum, the dose being one-fifth of a grain in distilled water injected deeply into the buttock. The histories of 12 cases are given in detail, with charts of the pulmonary lesions, showing the improvement that resulted under the treatment. Some of the cases were apparently at death's door when the mercurial treatment was commenced, and the results obtained are considered highly satisfactory. Of the 28 cases that have benefited very materially it was impossible to demonstrate any syphilitic element in 26; Dr. Wright is convinced that the mercurial salt has acted specifically on the tuberculous process; laboratory reports on the sputum indicate also that the drug has a direct destructive action on the tubercle bacillus. Assistant-Surgeon Hoyt records the results of microscopic examination of fæces from 300 patients at the Canacao Naval Hospital (Philippine Islands) for amœbæ; of these 300 patients only 20 were admitted for dysentery. Of the 300 fæces examined 104, or 34·6 per cent., contained motile amœbæ. In 14 out of 20 dysenteric patients amœbæ were found in the stools. 90 samples of fæces containing motile amœbæ were derived from patients who did not show "at the time of the examination any symptoms which could be positively attributed to their presence in the intestinal canal." During the eight months while these examinations were carried out, seven hospital corps men and three medical officers stationed at the hospital were infected with amœbæ in spite of rigid precautions (use of distilled water, cooked vegetables, and carefully disinfected fruits); but the diagnosis was based on the results of stool examinations, the typical signs and symptoms of dysentery being absent; the symptoms that existed were debility, anæmia, digestive disturbance, loss of weight, and in a few cases mild neurasthenia. The symptoms of blood and mucus in the stools, and tenesmus, were not present. Antidysenteric treatment (chiefly high irrigation of the colon) only gave temporary relief and the patients were invalided home. The part played by amœbæ seems to be uncertain, but they were found to be present in some patients admitted to hospital for other affections, but suffering from the symptoms of debility, anæmia, and so on, just mentioned; and Assistant-Surgeon Hoyt considers that "it would be very unwise to ignore this organism as an etiological factor in affections other than typical dysentery." The remainder of the number is occupied by clinical reports and a survey of progress in the various branches of medical science.—

In the October number Assistant-Surgeon C. S. Butler describes a peculiar characteristic observed in spirochæta Duttoni—viz., the development of small nodules, generally about the middle of the organism, which in many cases contained granules taking Romanowsky's chromatin stain. The author points out that the body is clearly not a spore and suggests that the staining reaction described seems to indicate spirochætæ to be protozoal rather than bacterial in their affinities. Pharmacist E. R. Noyes, in a paper on the Composition of Potable Water, viewed in its chemical aspect, constructs a composite standard by taking the standards set up by various authorities and combining them together; he then finds (as was to be expected) that such a composite standard is valueless. His final conclusion is "that, if on analysis we find an increase in the quantity of any one or all of the nitrogenous products over that contained in a pure water from a like source in the same neighbourhood, and the chlorine remains unchanged, then the water has suffered in quality by the addition of vegetable matter, but it is not polluted. If, however, there is an increase in the quantity of one or all of the nitrogenous products, and at the same time an increase in the chlorine, then animal matter has been added and the water is polluted and dangerous." Instances are given in support of this opinion, which will meet with general acceptance. Four cases of tuberculosis, treated by mercurial injections (as recommended by Dr. Wright in the previous number of the *Bulletin*), are described by Assistant-Surgeon Reynolds Hayden; marked improvement took place in all.

Journal of the American Medical Association.—In the February number of this journal Dr. F. Proescher and Dr. J. A. Roddy report 48 cases of paratyphoid fever (type A) occurring in the Allegheny General Hospital, Pittsburg, in 1907–08. They describe their method of making blood cultures and agglutination tests. The blood, taken under aseptic precautions, was incubated 15 hours in a mixture of 2 parts calf bile, 1 part bouillon, 2 per cent. glycerine and 2 per cent. peptone, and then inoculated on tubes of agar and incubated for another 15 hours. At the end of that time it was examined microscopically and if a motile, Gram-negative bacillus was present it was inoculated in milk-sugar bouillon, grape-sugar bouillon, milk, and litmus whey. For rapid and accurate clinical work it only was necessary to put the blood in calf-bile bouillon, incubate it for 15 hours, and then inoculate the above-mentioned culture media with it. In this way a diagnosis could be made in 30 hours. The agglutination tests were made by Dr. Proescher's method.[1] The agglutination test with an artificial serum is the most trustworthy method of differentiating type A from type B of the paratyphoid patient, the acid and colour reactions not being entirely constant. All the organisms isolated from the patients were of the type A, which is less fatal to experimental animals and appears to be much more common in America than in Europe. The authors describe the characteristics of paratyphoid fever, its abrupt onset, the uniform appearance of the tongue throughout the disease, the rarity of complications, and so on, and sum up their conclusions as follows: "Paratyphoid fever is a distinct disease, differentiated from typhoid fever by the following characteristics: 1. It is due to an infection by a bacillus which is not the typhoid bacillus. 2. The onset is more sudden, the duration shorter, and the disease milder than typhoid fever. 3. Hyperpyrexia never occurs, complications are rare, and there are no sequelæ. 4. The mortality is less than 2 per cent. On account of the variability of the initial symptoms the maintenance of fever for more than two weeks in some cases, and the frequent similarity of irregular cases to mild cases of typhoid fever, a positive clinical diagnosis can rarely be made. All require, and should have, for expert diagnosis an examination of the blood and the recovery, growth, and recognition of the bacteria." A bibliography of the principal literature of the disease is appended.

[1] Centralblatt für Bakteriologie, 1902.

Looking Back.

FROM

THE LANCET, *SATURDAY*, Feb. 26th, 1831.

PROFESSIONAL ATTENDANCE AT DUELS.

To the Editor of THE LANCET.

SIR,—You will, perhaps, allow me to inform your readers, that the late Mr. Heaviside was the surgeon alluded to by Mr. Justice Bayley, as having been at the bar of the Old Bailey for attendance at a duel. The facts of the case were these:—Two gentlemen, named Montgomery and M'Namara, upon a very trifling occasion, quarrelled, and engaged with inveterate animosity in a duel; they were both known to be excellent shots, and were determined to do business. They went to the field attended by their seconds and surgeons. When all preliminaries were adjusted, the principals fired together; Montgomery fell dead, and M'Namara was unhurt.

The survivor, seconds, surgeons, &c., were apprehended and taken to Bow Street. M'Namara was committed to Newgate to be tried for the murder. Heaviside was strongly reproved by the magistrate for being present upon such an occasion; he answered in a very grand style, justified his conduct, asserted his right to exercise his profession whenever and wherever he was called upon to do so, and avowed his determination to attend upon any similar business, if, in future, he were called upon.

"If that be the case, Sir," the presiding magistrate (I think it was Bond) said, "I must teach you to understand the law better," and immediately committed him to Newgate to be tried as an accessory before the fact. M'Namara was tried for the murder and acquitted. Heaviside was likewise acquitted and liberated. I conversed with him a few days after he was liberated; between ourselves he still insisted upon his right to attend upon duels when he was called upon to do so, but avowed his determination to be very careful how he exercised that right in future.

I am yours, &c.,

T. SHELDRAKE.

No. 73, Upper Berkeley-street, Portman-square.

DEVON AND EXETER DENTAL HOSPITAL.—The annual meeting of the subscribers to the Devon and Exeter Dental Hospital was held on Feb. 19th. The twenty-ninth annual report stated that 3038 cases had been treated during 1908. The financial statement showed an unfavourable balance of £25.

QUEEN CHARLOTTE'S LYING-IN HOSPITAL, MARYLEBONE-ROAD, N.W.—The annual meeting of the governors and subscribers of Queen Charlotte's Hospital was held on Feb. 23rd, Mr. Frederick W. Hunt (vice-president) being in the chair. The report referred to the large increase in the number of in-patients (1865, as compared with 1701 in 1907) and of out-patients (2169, against 1996 in 1907) and to the very low maternal mortality. Amongst 4165 out-patients during the past two years there had not been a single death. Moreover, during the past 27 years no fewer than 34,245 women had been attended in their own homes with a maternal death-rate of slightly over 1 per 1000 only. The chairman, in moving the adoption of the report, referred to the great and continued growth of the work of the charity and to the urgent need of additional support. He also remarked on the great work done by the hospital in training medical students, midwives, and monthly nurses, and mentioned that 130 pupil midwives passed the Central Midwives Board examinations last year out of 139 who competed.

THE LANCET.

LONDON: SATURDAY, FEBRUARY 27, 1909.

University Education in London.

ON Friday in last week a public announcement was made of the expected news that the KING had been pleased to appoint a Royal Commission on the subject of university education in London. Mr. HALDANE is the chairman of the Commission and the other members are: Lord MILNER; Sir ROBERT ROMER, formerly a Lord Justice of Appeal and a famous mathematical scholar; Sir ROBERT L. MORANT, Permanent Secretary to the Board of Education; Mr. LAURENCE CURRIE, a banker; Dr. W. S. M'CORMICK, secretary to the Carnegie Trust; Mr. E. B. SARGANT, an authority on education in the colonies; and Mrs. CREIGHTON, wife of the late Bishop of London and well known for her studies in history and economics. The joint secretaries to the Commission are Mr. J. KEMP and Mr. H. F. HEATH, who both have special qualifications fitting them for their posts. The terms of reference to the Commissioners are:—

To inquire into the working of the present organisation of the University of London, and into other facilities for advanced education (general, professional, and technical) existing in London for persons of either sex above secondary school age; to consider what provision should exist in the metropolis for University teaching and research; to make recommendations as to the relations which should in consequence subsist between the University of London, its incorporated Colleges, the Imperial College of Science and Technology, the other schools of the University, and the various public institutions and bodies concerned; and further to recommend as to any changes of constitution and organisation which appear desirable. In considering these matters regard should also be had to the facilities for education and research which the metropolis should afford for specialist and advanced students in connexion with the provision existing in other parts of the United Kingdom and of his Majesty's Dominions beyond the Seas.

Two things must strike everyone at once in the *personnel* of the Commission and in the terms of reference; and they are related to each other. The first is that the terms of reference are extraordinarily wide, really leaving the Commissioners to make recommendations of the most fundamental and vital sort under every conceivable heading; and the second is that the Commissioners have been selected with a view to obtaining broad, independent, and unbiassed advice, inasmuch as not one of them is officially connected with any of the institutions which are linked closely or loosely with the University of London—not one of the Commissioners will be affected personally by the recommendations of the Commission as a whole. This is an answer to the members of the medical profession who may consider it extraordinary that in a comprehensive inquiry into the working of the University of London, where the medical faculty is admittedly one of the most powerful and distinguished sections of the University and where the affiliated schools are among the most famous medical schools in the world, room should not have been found for a medical man among the Commissioners. For our own part we are content that there should be no purely medical voice on the Commission, the circumstances as regards the medical faculty of the University of London being what they are. The interests of every faculty in the University, the medical faculty among the others, will be best served by recommendations of the broadest sort under which medicine takes her place as a special branch of learning, but not as a branch of learning that requires particular legislation or allowances. The present position of medical education in London is a difficult one, and the difficulties unfortunately have pitted against each other experienced, learned, and practical men, some of whom are certain that the views of others are prejudiced or short-sighted. There are medical graduates of the University of London who, on grounds which they hold to be reasonable, desire to resist a closer connexion between the Royal College of Physicians of London and the Royal College of Surgeons of England on the one hand and the University on the other, though this union is much desired by others; there are champions of the ancient rights and dignities of the two great corporations who are apprehensive lest any *rapprochement* between the Royal Colleges and the University should mean the yielding of chartered privilege; there are eminent scientific and professional teachers who believe that the whole hope of London as an educational centre for medicine lies in some concentration of energy—some abolition of the waste due to the overlapping in instruction; there are other teachers of at least equal eminence who do not desire to see their medical schools, which have done famous work in the past and which are doing admirable work at the present, enter into any scheme which might damage their prestige or lower their utility. These are matters which will come before the Commission, and it is well that the representatives of the different views should be able to present themselves as fearless witnesses; and this they can do because it can be suggested of no one of the Commissioners that it matters a jot to him or her personally in which direction the recommendations on these points have to be made. We welcome the constitution of the Commission as a proof that large issues will be debated thoroughly.

All interested in medical education will also consider the appointment of this Commission to be most important, as furnishing an admirable opportunity to secure for the coming generation of the medical students in London necessary reforms in their professional training. Of course, it is possible that the appointment of the Commission has come too soon to be quite serviceable to the medical interests involved. The medical schools would certainly be able to make more impression upon the Commission if they could present a united front before it, and there will be undoubtedly a risk lest the Commissioners should hold that evidence given before them has in some cases been inspired by the spirit of internecine conflict. We do sincerely hope that the large object of making London into the great medical centre that it should be will be kept steadily in

view by all summoned to assist the Commissioners. Medical men have to remember that, distinguished as the medical faculty of the University of London is, the new Commission is to inquire into the working of the whole University, so that the exact position of a certain group of schools in one faculty may be regarded by the Commissioners as a detail, and may be rapidly dealt with, possibly in some way which will overlook the traditions of our great hospitals. Nothing is more certain to hamper the work of the Commission than any feeling engendered among the Commissioners that evidence is being given to them having its origin in a too pronounced protection of vested interests, and nothing will be more dangerous for the preservation of such of those interests as ought to be respected. We feel that a great opportunity may have arrived for the settlement of the difficult problems revolving around medical education in London, and we trust that all concerned will be ready to make concessions so that the medical students in London may no longer have just causes of complaint, and so that the medical schools of London may regain their former positions. The waste of effort, largely unpaid effort, in medical education which now takes place in London is a tragedy.

Candidates in Examinations.

A FEW weeks ago we discussed the subject of examinations from one point of view; we pointed out some of the faults of examiners both as regards the written paper and the *viva voce* examination. To-day we propose to consider the faults to which candidates at examinations are especially prone, for it must be acknowledged that those who enter for examinations are not always seen at their best. Examiners may be the cause of much annoyance and pain to candidates from a lack of sympathy or carelessness, but it should be recognised that it is in the power of candidates to cause their examiners a very great degree of unnecessary trouble and annoyance, and it will be well worth our while to consider some of the ways in which this may be brought about. Perhaps the greatest irritation is caused to examiners by bad writing. Candidates are often somewhat handicapped by having to write at a very great speed for two or three hours at a stretch, and this may go far to excuse some degree of carelessness of writing, but even when the amount written negatives the possibility of this excuse the writing of candidates is often atrocious. Merely badness of writing is of little moment but illegibility is of the first importance. Candidates who write carelessly, who neglect to dot their i's or to cross their t's, have only themselves to blame if their answers do not receive the credit which intrinsically they may deserve. An examiner may puzzle over one word for several minutes and yet he may have to give it up in despair, and when these hindrances are met with page after page, or even every few lines, need any wonder be felt that the examiner is inclined to give fewer marks to such a candidate than where the writing is clear and legible? Examiners, when all is said and done, are human, and without any direct intention on the part of the examiner, an answer irritating because of its illegibility will cost marks. Candidates do not realise the torture that bad writing can inflict upon examiners, and the more conscientious the examiner the more he will suffer, for the less scrupulous may dismiss as incorrect what he cannot read. Occasionally bad writing is intentional; of course, not throughout a paper, but sometimes a candidate comes to a word as to the spelling of which he has doubts, and a brilliant idea occurs to him—he will write the word so badly that its exact spelling cannot be seen, and he fondly imagines that as the examiner cannot tell how the word has been spelt it will be supposed that it has been spelt correctly. Or a large blot of ink is skilfully dropped exactly over the doubtful word. Such very elementary tactics may deceive the neophyte examiner but they are useless against one with any experience; he knows well what the blurred word means, he recognises the doubt in the candidate's mind and promptly he debits the candidate with the cost of the error. The candidate fails to recognise that once upon a time the examiner had been a candidate and therefore had known, and perhaps had even practised, these artless tricks. It is far better for the candidate to spell the word as well as he can and to leave it obvious what he considers to be the correct spelling. It may be right, and if so he will get what little credit may attach to correct spelling. If it be wrong the examiner will not think much of the mistake, but he would certainly, and rightly, resent an attempt to deceive him.

In a *viva voce* examination candidates sometimes try to "hedge." Suppose that a candidate is asked if a knee-joint contains any fluid. He does not know whether it contains any but he is afraid to say so, and therefore he gives the meaningless answer that "it contains more or less fluid." This is pure hedging; the examiner recognises that it is and the answer definitely scores against the candidate. It would be far better for him to say that he could get no fluctuation in the joint or that the patella could not be made to "ride" on the condyles of the femur, and therefore he thought that no fluid was present. This would receive due credit, but to give a doubtful, hedging answer is to invite censure. Excessive nervousness on the part of the candidate is very trying to a conscientious examiner. Nearly every candidate is nervous to some degree, for an examination is an ordeal. So much may depend on success that the nervousness may become exceedingly great. The average examiner does his best to put these nervous candidates at ease and generally he succeeds; but there are candidates who are in a pitiable state of nervousness and the examiner tries in vain to obtain sensible answers. At every mistake the candidate makes his hesitation increases, as does also the examiner's irritation. Fortunately such an extreme case occurs rarely, but it is to be seen sometimes. A useful method of allaying nervousness is to allow the candidate to choose the point on which he is first to be examined. For instance, if the subject is anatomy the examiner may point to a table covered with various bones and ask the candidate to select one on which he would like to be examined. This looks like being over-kind; it is not so at all. The man who can give a correct little demonstration of any bone will surely be able to do so of other bones. He will gain confidence, and can

be cross-examined successfully in a different branch of his subject, instead of being driven by failure to make excuses. Excuses put forward by candidates for not knowing the answer to a question are seldom of much avail. A candidate in a *viva voce* examination was asked a question on lunacy; he endeavoured to excuse his lack of knowledge by mentioning that lunacy was a branch of medicine which he did not intend to practise and therefore he had not read much of the subject. The examiner's reply was fully justified. "If you do not intend to practise lunacy," said he, "it will be wise to learn the subjects of the curriculum before qualifying; you will be referred." An old but amusing instance of the folly of excuses will bear repetition. Some 20 or 30 years ago when our knowledge of the physiology of the spleen was decidedly less than it is to-day a candidate was asked, "What is the function of the spleen?" The examiner expected the answer that nothing was known as to its functions. He was surprised, however, to be told, "I did know but I have forgotten." The examiner turned towards his fellow examiner and said with a sigh, "Is not this sad? There is only one man who has ever known the function of the spleen and he has forgotten." The feelings of the candidate can be imagined, but the question was at that date an unfair one unless it was intended in an honours examination to lead a man up to a little physiological discussion. Appeals *ad misericordiam* are seldom successful; they are confessions that the knowledge required is wanting. The most curious reply of which we have ever heard was contained in a paper on physics at the London matriculation examination. In answer to a question the candidate had written: "I cannot answer this question. Please excuse me; I am lame." It is sad to relate that so pathetic an appeal was made in vain.

Tutors at medical schools might well, we think, give the students a few general hints about examinations. A candidate ought to know that when he finds that he cannot answer a question fully he should answer as much of it as he can. For instance, if he is asked to diagnose a case and he is unable to arrive at a certain diagnosis the best course is to mention the signs and symptoms which have been observed and then to describe the possible causes which might give rise to them. Such an answer will not get full marks as a complete diagnosis would, but it will get marked fairly well, for it will show intelligence and care, while the examiners know that in after life many excellent practitioners will come across many cases where an absolute diagnosis, on first seeing the patient, is not possible. The best preparation for an examination is a good knowledge of the subject, not crammed during the last few weeks but attained by careful working during the whole course. Neither the theoretical nor the practical side of the work should be neglected but each should receive its due share of attention. In addition to this the student should practise the writing of examination papers, for as BACON says, "Writing makes an exact man," and there is no better test for deficiencies of knowledge than the attempt to put on paper the answers to questions. There should be no antagonism between candidates and examiners; each should deal fairly with the other, and if the candidate is well prepared and the examiner is just the result is sure to be satisfactory to both. The uncertainty of medical examinations is a blot upon our system of medical education, and both examiners and the tutors at medical schools should work to remove it. The waste of money and of effort implied in the large percentage of rejections that is now found among the candidates sufficiently excuses the fact that much of what we have just written ought to be assumed as common knowledge.

Tuberculosis in the Cow and its Dangers.

SINCE the issue of the important volume which formed its second report the Royal Commission on Human and Animal Tuberculosis has continued its experimental work at the Blythwood farm on the conditions under which man and animals may be reciprocally infected with the disease. Its third report, which we published in our issue of Feb. 13th, together with an account of the detailed report by Dr. F. GRIFFITH which accompanies it, relates to a section of the inquiry on which thorough experimental work is of particular value. The Commission has taken tuberculous cows without obvious disease of the udder, and in which, post mortem, in all but one case not even the smallest lesion of tuberculosis could be detected in the udder, and has tested the infectivity of the fæces and of the milk to pigs and rodents by means of a large series of feeding and inoculation experiments. All the six cows employed reacted to tuberculin, but while three could from their clinical condition be diagnosed as tuberculous, the remaining three cows were in good condition and presented no evidence of the disease apart from the reaction. The cows recognised clinically as tuberculous were all found to excrete virulent tubercle bacilli in large numbers in the fæces, and the experiments recorded by the Commission make it clear that in the case of cows obviously suffering from tuberculosis of the lungs or alimentary canal the excrement, from the point of view of accidental tuberculous contamination of the milk, is much more dangerous than the matter discharged from the mouth and nostrils. The uterine discharges of these cows also contained numerous tubercle bacilli. In addition, it was found that the milk of these cows contained tubercle bacilli, not only when the milk was obtained in the ordinary way, but also when it was withdrawn from the teats by a sterilised catheter. Tuberculous cows without disease of the udder may thus excrete tubercle bacilli by the mammary gland and also cause tuberculous contamination of the milk by the fæcal matter which so frequently is introduced in ordinary milking. In the case of the animals which were in good condition and showed no clinical signs of disease no evidence of infectivity of the milk was obtained. The results were, however, different in the case of the fæces. The dung of one cow which had slight tuberculosis of the lungs and a mediastinal gland did not give rise to tuberculosis in any of the animals inoculated. One of the other two cows showed after death a caseous pharyngeal gland, a few small nodules in the intestine, and slight disseminated tuberculosis. The fæces of this animal did not cause tuberculosis in the rodents inoculated with them

but proved to be infective to the pig when mixed with sterilised milk and given as food. The remaining cow had tuberculosis limited to the lungs and its fæces were on several occasions found to be infective on inoculation.

The result of the Commission's experiments not only accords, as regards the infectivity of the fæces of the tuberculous cow, with those obtained by the investigators of the American Department of Agriculture, but goes far to explain the frequency with which milk samples tested in the public health departments of the County of London and other large towns have been found to contain tubercle bacilli. It seems necessary to abandon the prevalent view, which received the support of the Tuberculosis Commission of 1894 and has formed the basis of special milk clauses in local Acts of Parliament, that the demonstrably tuberculous udder is the only factor of importance in the production of tuberculous milk. This consideration deserves special notice in view of the new milk legislation which we are glad to see has been promised in the KING'S Speech for this session. As regards tuberculosis, the protection of the public health demands, at the least, that steps should be taken to secure that the cow with clinical signs of tuberculosis, whether the udder is affected or not, should be sought out and excluded from the sources of milk-supply, and like considerations strongly support all practical measures for eliminating tuberculosis from dairy herds. It will also be observed that the case of the sanitarian for insisting that milking should be conducted under cleanly conditions is strengthened by the evidence now available respecting the infectivity of the fæces of tuberculous cows. Whatever restrictions or regulations may be imposed by legislation, it is important to remember the experience of Denmark and of certain States in America where active measures have been taken to reduce the prevalence of bovine tuberculosis and to obtain milk under reasonably hygienic conditions. A very necessary condition of real progress in these directions is the education of the cowkeeper and dairyman in the principles on which precautions are demanded from them in the name of public health, and active encouragement and assistance from the authorities should be extended to all milk traders who are prepared to do their best to satisfy these requirements. It is essential also that any administrative measures which are adopted in this matter should keep pace with knowledge and research. In this report the Royal Commission has given an excellent example of the kind of experimental work which needs to be continued in connexion with this and many other branches of the important subject which it is investigating.

Annotations.

"Ne quid nimis."

A MEDICAL MARTYR.

WE publish this week an obituary notice that adds to the honour-roll of medicine the name of Dr. Thomas Carlyle Parkinson. His student career was extraordinarily brilliant and the academic honours with which Sydney crowned him were proved worthily bestowed by his subsequent scientific attainments. Being awarded a travelling scholarship, he came to England to study in the Lister Institute, and whilst working there he was chosen a member of the Commission for the Investigation of Plague in India. Last month he was engaged on a research for the Commission at an isolated laboratory at Elstree. He became accidentally infected with the disease for which he was seeking a remedy and he died from its pneumonic form on Feb. 4th. We have had to record the like fates of not a few investigators in bacteriological laboratories as the direct outcome of their devotion to their duties, amongst which noble company the name of Dr. Müller of Vienna, who met a heroic death from plague in the Allgemeines Krankenhaus 11 years ago, comes at once to mind. Again, in 1900 Dr. Rostanechi, working in the Cracow laboratory, contracted a fatal plague infection, and of our own countrymen we may recall Major J. W. Evans of the Indian Medical Service, professor of pathology at Calcutta, who died from plague in 1899, and Lieutenant Forbes Grantt Tulloch of the Uganda Sleeping Sickness Commission who was killed by that disease after looking death in the face for many months with a cheerful and indomitable courage. These are but a few instances of many such medical martyrs. Our columns and the memories of our readers could easily add to the list; but those we have mentioned are especially conspicuous, as they were all engaged on researches in which their lives were daily dependent on a scrupulous care in the technique of their work, and they knew it and knew that they were shaking hands with death. Medicine is a Spartan mother to her sons; she has seen with pride many, and will see many more, brought home upon their shields, but their comrades who remain must feel an unaffected sorrow for each life laid low, too often a young life that had promised distinguished services to science.

LEPROSY IN THE HAWAIIAN ISLANDS.

THE gradual increase of leprosy in Hawaiian territory, especially in Honolulu and other centres of population, has caused the Government of the United States some concern and has led to the institution of fresh efforts to combat the disease. In 1905 an Act was passed by Congress providing means for investigation of the circumstances associated with the malady in Hawaii and for its proper treatment. Funds were voted and a site was secured, close to the existing leper settlement on the island of Molokai, on which to erect a modern hospital with accommodation for 40 patients, along with a fully-equipped laboratory in which to carry out bacteriological examinations. The erection of these buildings is now nearing completion, and Dr. Walter R. Brinckerhoff, who has been appointed director of the investigation station, has issued a preliminary report dealing with "The Present Status of the Leprosy Problem in Hawaii." Attempts have been made, it appears, during the last 40 years to control leprosy by segregation but with little result. During that period some 5853 patients have been interned in the leper settlement, an annual average of 146 cases. The incidence of the disease was formerly almost entirely upon the native population; but recently it has been spreading among the other races comprised in the inhabitants of these islands, especially among the Portuguese and Japanese. In addition to the leper settlement at Molokai there is a receiving station at Kalihi, a "remote" suburb of Honolulu, where patients are kept under observation pending confirmation of the diagnosis, after which they are drafted off to the leper settlement. It is proposed to extend the accommodation at Kalihi by the erection of a hospital providing beds for treating 12 cases, together with a laboratory. Dr. Brinckerhoff believes that the spread of leprosy is favoured by the conditions of life in the native quarters of Honolulu and other towns. Cases are concealed for years before they come under observation, so that if, as some persons contend, leprosy is

transmissible during the whole of its course, opportunities of an ample kind are afforded for spreading the disease. It is interesting to note that there is a widespread belief in these islands that leprosy is spread by sexual intercourse. It is now proposed to apply far more stringently the existing laws for the segregation of lepers. In his report Dr. Brinckerhoff gives the results of some observations which he has made "On the Reaction of Lepers to Moro's 'Percutaneous' Tuberculin Test," which, however, he concludes is of no value in the differential diagnosis of leprosy and tuberculosis. He also appends a note "On the Possibility of the Mosquito Acting in the Transmission of Leprosy." It appears from experiment that the female Culex pipiens defæcates at the time of biting and that there is a danger that the fæcal matter, which might contain the bacilli of leprosy obtained by biting a previous case, being deposited on the skin of a healthy person near the point of irritation, might be rubbed by the person bitten into the puncture made by the mosquito, and in this way inoculation might take place. It has, however, to be admitted that evidence as to the inoculability of leprosy through lesions of the skin is at present largely on the negative side; hence Dr. Brinckerhoff concludes that although the mechanism for transference of the bacilli of leprosy by the mosquito from a leper to a healthy person's skin exists, yet the available data do not permit of a positive statement being made that leprosy is transmitted in this way; indeed, he expresses the view that the probabilities are against such a mode of transmission.

THE REVISION OF THE BRITISH PHARMACOPŒIA.

A RECENT report of the committee of reference in pharmacy to the Pharmacopœia Committee of the General Medical Council gives further results of the work accomplished in connexion with the revision of the British Pharmacopœia. The revision is carried up to Oct. 29th, 1908, and deals for the most part with some new formulæ, the rejection of certain tests, and their replacement by more trustworthy ones. It is obvious that in some instances further practical inquiry needs to be done before a line of revision can be set out. In regard to acetum ipecacuanhæ the discussion of this preparation was postponed in view of its possible omission. Experiments again are being carried out with amyl nitris with the view of improving the description and tests, while a similar inquiry is being instituted in regard to the detection of exhausted fruits in anethi fructus. Distilled water receives a revised number of characters and tests, while a new method of assay is suggested for cantharis. Synthetic camphor it is recommended should not at present be admitted as it is not identical with the natural substance, and in order to exclude the synthetic drug the requirement should be made that camphor should melt at 175° C., and that a solution of 25 grammes in sufficient alcohol (90 per cent.) to produce 100 cubic centimetres at 16° C. should exhibit an optical rotation of about + 10° when examined in a tube 100 millimetres long. In regard to chloroform it is suggested that as this substance, to which 2 per cent. of ethylic alcohol has been added, keeps practically indefinitely and under all conditions this addition should be made. The specific gravity and boiling point of this mixture are being determined. In regard to aloes, it was agreed that it was desirable to embody the descriptions of both the Barbadoes and Socotra varieties in one monograph with the object of discouraging the use of Socotrine and Zanzibar aloes and encouraging that of the better-prepared Curaçao (Barbadoes) variety, but allowing the use of both varieties in the possible event of scarcity of either. There are some suggestions referring to an "ash limit" for certain drugs—as, for example, cinnamon bark and cascarilla. The report concludes with some special alterations in regard to the minute limits of lead to be allowed in such substances as glycerine, liquor ammoniæ, potassium iodide, sodium tartrate, lithium citrate, sodium phosphate, and so forth, and an appendix is added setting forth the reagents used for testing colorimetrically for lead and the mode of procedure.

OUR DEBT TO THE VEGETABLE WORLD.

THE modern chemist points proudly to his synthetic triumphs, but with all his skill and knowledge he has not yet succeeded in preparing in practical quantities for his fellow men a food-stuff from its elements. The synthetic processes of the plant are so far inimitable, and the plant is after all both the direct and indirect food of the animal. The relations between plants and animals form a beautiful dispensation and for the vegetable kingdom man should hold a deep reverence and do his best to extend and promote its faithful offices. Whether his views are in favour of the exclusive diet of vegetable or of a diet containing both animal and vegetable products he owes the vegetable world more than one debt. He is at the mercy of the vegetable for his food, whether it be animal or vegetable, and he may be at the mercy of the vegetable for a supply of oxygen, without which the vital processes of his organism could not be sustained. It is thus conceivable that as the animal kingdom exists only by virtue of a continual combustion process, in which air is taken up while carbon dioxide is liberated, the loss of an agency which not only removes this product of respiration but sends back oxygen in its place would be disastrous. This agency is of course the plant, and in short, the animal and the plant are interdependent on each other. On this line of reasoning animal life would be extinguished if vegetable life ceased and vegetable life would fail if animal products were not available for its sustenance. This is an interesting cycle of events, but the performance of a cycle implies a force and the motive power of these alternate and great synthetical and analytical processes is light. It may happen, therefore, that a horrible struggle for existence between plants and animals might ensue if for any considerable period the sun was shut out from the world, for then this agreeable interchange of mutually advantageous exhalation would cease and with it all life. Were those who worshipped the sun ignorant of these things? or did they realise that it was the source of both food and air?

THE ORIGIN OF THE FACIAL NERVE.

THE exact origin of the facial nerve is a matter of considerable interest both to the physiologist and the clinician, but in spite of many investigations it is curious how it remains a subject of controversy. In cases of facial involvement from disease of the pontine nuclei the observation has frequently been made that the upper face is much less affected than the lower, and this has led to the suggestion that there is a separate nucleus for the orbicularis palpebrarum, frontalis and corrugator, away from the main nucleus. This remarkable immunity of the upper facial muscles was at one time explained by the well-known hypothesis of Mendel who maintained that the cells of origin for the nerves to these muscles were situated in the lower part of the oculo-motor nucleus of the same side. This view has been completely discredited pathologically, and clinically there is reason to think that the immunity of the upper facial group is not by any means always so complete as it appears at first sight. Recent evidence goes to show that the origin of the upper facial muscles is in the dorsal part of the facial nucleus in the pons. With regard to the origin of the nerve to the orbicularis oris, in view of the fact that it is impossible to put that muscle in action without at the same time innervating the transverse muscles of the front of the tongue,

the idea has been suggested that its cells of origin are in the hypoglossal nucleus. In the December number of the *Review of Neurology and Psychiatry* Dr. Alexander Bruce and Dr. J. H. H. Pirie record the result of the examination of a case of complete peripheral left facial paralysis, where death supervened suddenly five months later from heart failure. Examination in series by Nissl's method of the pons and medulla showed that there was not a single normal cell in the whole of the left facial nucleus of the same side, while there was no degeneration whatever in the facial nucleus of the opposite side; the component cells of both hypoglossal nuclei were throughout quite intact; and there was no indication of any change in the character of the cells of the oculo-motor nuclei. The case may fairly be taken to indicate that all the fibres of the facial nerve arise from the groups of cells in the pons which lie behind the superior olive and are known generally as its main nucleus, these groups being regarded as including a small accessory group situated a little behind it—i.e., near to the sixth or abducens nucleus.

A "GOOD SAMARITAN" ABOVE THE SNOW-LINE.

AN esteemed Italian correspondent writes:—"On Feb. 10th expired, in his hermitage on the Little St. Bernard, the Abbé Chanoux, rector of the hospice on that mountain which is believed, in Ruskin's memorable words, to have 'shed its burial-sheets of snow around the march of Hannibal.' A nature-student as well as a divine, he employed his leisure after relieving the storm-stayed or wayfarer in the cultivation of his garden—his 'Chanousia' as he fondly called it—in which he tested the resisting power of plants to the Alpine cold. A mediator between 'Our Lady of Flowers' and 'Our Lady of Snow,' he achieved marvellous results, forming and maintaining a 'vivaio' or nursery in which every specimen of the Alpine flora was in evidence, till the scientific world intervened with its sympathy and support and the Dowager Queen Margherita gave it the royal benediction in an inaugural ceremony. The abbé was in his eighty-first year when he died—died amid the requiem of the storm which left his hospice veiled in snow like a mausoleum in marble. But nearly to the last he retained his health, his fine, erect figure, and his kindly, courteous address—insomuch that the wayfarer whom he rescued or relieved has been known to bless the 'misadventure' which brought him into so genial a presence under so hospitable a roof. Many, in fact, who by stress of storm had come to know him renewed the visit in less trying circumstances, delighted to enjoy a day or two or an evening with the 'old man eloquent,' brimming over, as he was, with the anecdote which varied his instructive talk on botany and mineralogy, as it led up to discourse on the religious themes in which he was a master. The poet Giosuè Carducci during his summer *villeggiatura* on the Graian Alps never failed to see the abbé more than once, gaily ascending the mountain to the hospice where the welcome and the good cheer—mental as well as material—made more than amends for the fatigue. Queen Margherita and the Duke of the Abruzzi were also frequent and sympathetic visitors, pleased to find so much practical benevolence illustrating so much priestly learning, such proficiency in nature-study reinforced with such 'sagacité de cœur.' For the last week or two his health had begun to fail—his eyesight having become affected by the continuous glare of the snow, and his heart having lost much of its power, after 50 years' laborious life at more than 7000 feet above the sea. But his 'calm decay' was as skilfully tended as it was affectionately watched, and he breathed his last not less tranquilly than he had lived amid the silence and the solitude in which from his youth he had loved to cast his lot."

"DICHOTOMY" IN AMERICA.

FROM an article in the February number of the *St. Paul Medical Journal* it would appear that the resolution passed by the Minnesota State Medical Association some eight years ago rendering any member guilty of dichotomy—that is to say, of accepting part of the fee of a consultant recommended by himself—liable to expulsion, has not resulted in complete cessation of the practice in that State. Sometimes the surgeon says to the general practitioner, "My fee will be so much, depending upon what the patient can pay, but you may present the bill charging what you like and send my fee to me. The patient need not know what my fee is." Sometimes the matter is managed somewhat differently, but if the patient is kept in ignorance of what arrangement is made this dichotomy is dishonest, for it may result in a less experienced but more unscrupulous consultant being recommended. No doubt it is often hard for a practitioner who has great difficulty in obtaining adequate remuneration for his own prolonged and arduous services to see a consultant who comes for an hour or so only carry off as much as would have paid his own last year's bill for attendance on the family several times over, thus rendering the probable date of its settlement more remote than ever. In some cases the frank interchange of views between the practitioner, the consultant, and the patient when the last named is unable to find a really adequate fee will result in the consultant saying, "I shall be happy to reduce my fee to so-and-so on condition that you pay so-and-so to Dr. X, upon whose care and attention for the next month or more your life may depend quite as much as on what I am going to do for you." So far as our experience goes, the practice is little heard of in this country, the only personal advantage looked for by the general practitioner when recommending a consultant being the possible recommendation to some patient of the consultant who may be about to settle in the practitioner's neighbourhood. This hope, if operative at all, would favour the selection of a consultant enjoying an extensive practice.

THE SEVENTH INTERNATIONAL CONGRESS OF APPLIED CHEMISTRY.

THE first visit to London of the International Congress of Applied Chemistry will take place this year, the meeting having been convened for May 27th to June 2nd, in the buildings of the University of London, the Imperial Institute, and the Imperial College of Science and Technology at South Kensington. The Congress will be opened officially with an inaugural meeting in the Royal Albert Hall on Thursday, May 27th, and in the afternoon general meetings for constituting the sections will be held. A provisional programme of the Congress has been printed and large and representative committees composed of delegates of the most important scientific and technical societies and leaders of industry in this country have been formed, and altogether such influential support is promised from all parts of the civilised world as is certain to insure the success of the meeting. A provisional list also has been published of the communications to be read before the various sections, many of them being promised by foreign delegates. The importance of this gathering and its proceedings in relation to the industrial interests of the world may be appreciated from the following synopsis of the sections and sub-sections: I. Analytical Chemistry. II. Inorganic Chemistry and Allied Industries. III. (*a*) Metallurgy amd Mining, (*b*) Explosives. IV. (*a*) Organic

Chemistry and Allied Industries, (*b*) Physiological Chemistry and Pharmacology, (*c*) Colouring Matters and their application. V. Industry and Chemistry of Sugar. VI. (*a*) Starch Industry, (*b*) Fermentation. VII. Agricultural Chemistry. VIII. (*a*) Hygiene and Medicinal Chemistry, (*b*) Pharmaceutical Chemistry, (*c*) Bromatology. IX. Photo-chemistry — Photography. X. Electro-chemistry — Physical Chemistry. XI. Law, Political Economy, and Legislation affecting Chemical Industry. All persons interested in applied chemistry may become members of the Congress and those intending to present papers are expected to notify their intention of so doing at least 15 days previously to the opening of the Congress.

HEART BLOCK IN THE VENTRICULAR WALLS.

THE phenomena of heart block originally investigated from the physiological standpoint by Stannius and Gaskell many years ago have in recent years, owing to the work of Mackenzie, Wenckeback, and other observers, been fruitful in their application to the clinical phenomena of heart disease. The further discovery of the bundle of His and its importance in regard to the conduction of the stimulus for contraction to the various parts of the heart has also served to afford a rational explanation of many forms of tachycardia, arrhythmia, and extra-systole. Dr. Albion Walter Hewlett of San Francisco[1] has recorded his observations on an interesting case of cardiac failure presenting some unusual features, which he regards as the result of intraventricular heart block. The patient was a powerfully built man, admitted to hospital for cyanosis and dyspnœa. He was a teamster, and had always worked hard and drunk heavily. He had had gonorrhœa, but denied having had syphilis. His shortness of breath appeared five months previously while he was doing some heavy lifting. This had gradually grown worse and a few days before admission his urine had become small in quantity and his feet and abdomen swollen. The heart was markedly enlarged and on auscultation rapid action with embryocardia and a slight apical systolic murmur were found. The pulse was small, regular, and rapid, 140 to 160 per minute. The cervical veins were distended and markedly pulsating. The liver could be felt five centimetres below the costal margin and was also pulsating. There was fluid in both pleural cavities and in the abdomen. Venous tracings showed a positive venous pulse and an absence of auricular waves. Immediately after admission he was given an intravenous injection of one milligramme of strophanthin. His pulse rapidly changed and after an hour it had fallen to 70 per minute and was of fair size but very irregular. At the same time his general symptoms improved very markedly, but tracings of his venous and hepatic pulsations showed positive venous pulse with absence of auricular wave. The patient gradually improved during his stay in hospital to such a degree that a ventral hernia from which he suffered was operated on and cured. During his whole stay, however, the venous and hepatic pulses remained of the same type and there was no evidence of auricular contraction, although large numbers of venous tracings were taken. Several distinct abnormalities in the character of the ventricular contractions were observed, and it is to these especially that Dr. Hewlett draws attention. The first was the occurrence of ventricular contractions which produced waves in the jugular pulse but little or no effect on the apex tracing. It was difficult to attribute these pulsations to blocked auricular extra systoles or to auricular fibrillation, since no definite evidence was at any time forthcoming of auricular contractions, and Dr. Hewlett thinks it more probable that they were the result of weak or partial ventricular contractions. A second peculiarity was the superposition of one systole or partial systole on another. The third was a delay in the onset of the systole of the right ventricle as compared with that of the left. All of these abnormalities were produced or greatly favoured by the administration of strophanthin. The explanations offered by Dr. Hewlett are as follows. The delayed systole of the right ventricle was found to be simply delayed and not to be weak. It is therefore assumed that the stimulus reached it abnormally late, and an attractive hypothesis is that a block occurred in the right limb of His's bundle. In regard to the other two abnormalities it seems improbable that the small contractions should represent weak systoles involving the whole heart, and the suggestion offered by Dr. Hewlett is that the small waves were produced by contractions of a portion only of the ventricular musculature. He regards the fact that these peculiarities were induced by strophanthin as supporting this view, since strophanthin tends to inhibit the passage of stimuli from one part of the heart to another. From a study of the literature he finds that the possibility of intraventricular blocking has only occasionally been considered. Schmoll has suggested blocks within the ventricles to explain the slow heart action during the paroxysms of Stokes-Adams disease in complete heart block. Partial contractions have been observed in dying hearts, one ventricle stopping before the other. The subject has also been discussed by von Leyden, Mackenzie, and Krause and Nicolai. Schmoll has also called attention to the possibility of partial contractions of the ventricles and proposed the name of "ataxia of the heart" for such conditions. Dr. Hewlett suggests further that these incoördinated contractions may be related to fibrillation of the ventricles and therefore he regarded it as an indication not to persist with the strophanthin injections in his own case. His observations and his deductions therefrom are of considerable interest and afford further illustration of the useful results obtainable by the instrumental study of obscure cases of cardiac disease.

[1] The Archives of Internal Medicine, vol. ii., No. 2, p. 138, Chicago, 1908.

UNCERTIFIED CAUSES OF DEATH.

DURING the 53 weeks of last year the causes of 2326 of the 246,604 deaths registered in the 76 large English towns dealt with in the Registrar-General's weekly returns were not certified either by a registered medical practitioner or by a coroner. The mean proportion of these uncertified deaths in these 76 towns was thus equal to 9 per 1000, and corresponded with the proportion in 1907; in 1904 and in 1905 the proportion was equal to 11 and in 1906 to 10 per 1000. It is satisfactory to find that the proportion of uncertified causes of death has shown a decline during the past five years, but the wide variation in the proportions prevailing in different towns seems to call for explanation. In London during last year the causes of but 65 of the 68,193 registered deaths were not duly certified, equal to rather less than one per 1000, while in 1907 the proportion only slightly exceeded one per 1000. In several of the Lancashire towns the proportion of uncertified causes of death, on the other hand, show a marked excess; it was last year equal to 27 per 1000 in Liverpool, 33 in St. Helens, 34 in Preston, 35 in Bootle, and 45 in Warrington. In Birmingham, too, the proportion of uncertified deaths is not only excessive but is increasing; in 1906 the proportion was equal to 28 per 1000, it rose to 34 in 1907, and further to 38 per 1000 in 1908. With reference to these wide variations in the proportions of uncertified causes of death it may be pointed out that whereas during last year in London inquests were held in rather more than 10 per cent. of the registered deaths, the

proportion of inquests held in those towns in which the proportion of uncertified deaths, as stated above, is excessive did not exceed 3·7 per cent. in St. Helens, 4·1 in Warrington, 4·8 in Preston, 5·1 in Birmingham and in Bootle, and 6·2 per cent. in Liverpool. It would thus appear that there is a pretty constant relation between the proportions of uncertified causes of death and the proportions of inquests held. The grave importance, from many points of view, of the due certification of all causes of death is beyond question, and it may be hoped that fuller coöperation between local sanitary authorities and coroners will ere long reduce the proportions of uncertified deaths in those towns in which they are still excessive.

THE RESUSCITATION OF THE APPARENTLY DROWNED.

IN his forthcoming Hunterian lectures "On the Mechanism Underlying the Various Methods of Artificial Respiration," to be delivered at the Royal College of Surgeons of England on March 1st, 3rd, and 5th, Dr. A. Keith, conservator of the museum, will deal with the results of the various methods of resuscitation of the apparently drowned as shown in the records kept by the Royal Humane Society at Hunter's suggestion. It is not generally known that the paper contributed by Hunter to the Royal Society in 1776 on the "Best Means for Recovering the Apparently Drowned" was really an answer to a request made to him by Dr. William Haines, the founder of the Royal Humane Society. Hunter suggested that the society should keep records of the means employed in every case and the result of their application.

OFFICIAL MEDICAL REPORTS IN EGYPT IN ROMAN TIMES.

Dr. B. P. Grenfell and Dr. A. S. Hunt have just published their annual volume (the sixth in succession) of editions of the papyri found at Oxyrrhynchus. As usual, there are interesting documents illustrating the duties of medical men in Egypt under the Roman Dominion, and the new evidence is the more valuable because derived from the contents of absolutely contemporary records which almost from the actual date of their engrossment have been preserved in the ruins of the residence of the city archivist to whom they were delivered for custody. The most important new manuscript of this kind in the recent volume is the report of two doctors retained as medical officers by the municipality of Oxyrrhynchus as to the health of an official employed by the Logistes or provincial governor. The date of the inquiry is definitely deducible as A.D. 316 because the Roman consuls for that year are mentioned in the first half of the papyrus which contains a surveyor's estimate for the hygienic repair of the public baths, submitted to the same governor. The second report runs as follows:—

> To Valerius Ammonianus logistes of the Oxyrrhynchite nome from the Aurelii Heron son of ..... and Didymus son of Dioscurus, both of the illustrious city of Oxyrrhynchus, public physicians. We were sent by you to-day; Pharmouthi 6; in consequence of a petition delivered to you by Apollonius, officer of Aurelius Antonius, governor of Aegyptus Herculis, to proceed to the house in the said city, and inspect this person, and to make a written report upon the condition in which we found him. Having therefore proceeded thither we saw the man himself lying upon a bed seized with a slight ..... fever which we accordingly report. Aurelius Heron and Aurelius Didymus.

This document restored to us after nearly 16 centuries undoubtedly reproduces the proper official phraseology current at the time for such epistles and forms a specimen model of how they ran. In fact, Dr. Grenfell and Dr. Hunt possess, and summarise only, because so similar in terms, another papyrus, addressed to the same governor by two *δημόσιοι ἰατροί*, one of whom was named Herodotus, concerning certain injuries received by a citizen. Another text of the same kind was published as papyrus 51 of Oxyrrhynchus and a fourth record of the sort is in papyrus of Greek texts No. 647 of the Berlin Museum. A second piece of what may be termed medical literature in the new volume is, without at all straining the connexion, closely allied to the doctrines of "Christian Science" as enunciated by Mrs. Eddy. It is a charm for warding off fever and similar in terms and character to one at Berlin, No. 956 there, which is addressed to pagan deities. The Oxford specimen, however, is worded in the style of the Gnostic sect and ornamented at the end with their symbol, the abraxas, which denoted the Supreme Being. The text reads as follows:—

> Verily guard and protect Aria from ague by day, and quotidian ague and ague by night, and slight fever. All this thou wilt graciously do in accordance with thy will first and with her faith, since she is a servant of the living God, and in order that thy name may be glorified for ever.

In conclusion, mention may appropriately be made here of the publication in the "Classical Quarterly," vol. i., of some fragments of the "De Materia Medica" of Dioscorides from pieces of papyri in the Aberdeen Museum and of an article by Dr. K. Sudhoff entitled "Ein neues, ärztliches Gutachten aus Papyrusfunden" in the *Mitteilungen zu Geschichte der Medizin und der Naturwissenschaften* for 1906.

ROYAL COLLEGE OF PHYSICIANS OF LONDON.

THE following lectures will be delivered at the College, Pall Mall East, on the Tuesdays and Thursdays mentioned, and on Friday, April 2nd: The Milroy lectures will be delivered by Dr. R. Tanner Hewlett on March 2nd, 4th, and 9th, the subject being Disinfection and Disinfectants; the Goulstonian lectures will be delivered by Dr. A. E. Russell on March 11th, 16th, and 18th, the subject being on Some Disorders of the Cerebral Circulation and their Clinical Manifestations; the Lumleian lectures will be delivered by Dr. Norman Moore on March 23rd, 25th, and 30th, the subject being Rheumatic Fever and Valvular Disease"; and the Oliver-Sharpey lectures will be delivered by Professor C. S. Sherrington, M.D. Cantab., F.R.S., on April 1st and 2nd, the subject being the Rôle of Reflex Inhibition in the Coördination of Muscular Action. The lectures will commence at 5 o'clock P.M.

THE PREVENTION OF SLEEPING SICKNESS IN NYASSALAND.

AS elsewhere in Africa, there is considerable activity in the Nyassaland Protectorate as regards the carrying out of measures to prevent the importation and spread of sleeping sickness. From a report just received from Dr. S. K. Norris, acting principal medical officer, we learn that a vigorous search is being systematically made by medical men specially appointed for sleeping sickness investigation to discover any cases of the disease that may exist in the Protectorate. All natives with enlarged glands are carefully examined and punctures are made to ascertain the presence or absence of trypanosomes in the gland juice. It is probable that imported cases from infected districts may be at present living in Nyassaland, but if such are found they will be strictly segregated. A detailed inquiry is being also made as to the exact distribution of tsetse flies with special reference to the glossina palpalis, which, however, has not been found so far in the Protectorate. On the other hand, glossina morsitans has an extremely wide distribution both in Nyassaland and in the adjoining territory of North-Eastern Rhodesia. If it be the case, as is asserted by many competent authorities, that sleeping sickness is only spread by the former of these tsetse flies, little fear need be felt that the disease will devastate the Protectorate in which, by all accounts, the conditions necessary for the establishment of endemic foci are absent. As a

precautionary measure to prevent importation of the disease, the movements of the natives are being strictly controlled, especially as regards the entry across the borders of those who have been residing in areas already infected by the malady.

THE PREVENTION OF PLAGUE AND CHOLERA IN BARODA.

IT appears to be a delightfully simple and easy way of protecting oneself against plague to swallow pills instead of submitting to the disagreeable process of inoculation with all its discomforts and inconveniences. And this is the plan suggested by Khan Bahadur Shamsudin J. Sulemani, Licentiate in Medicine of the Bombay University, for 32 years a member of the medical service of the Baroda State and for the last 23 years or more its chief medical officer. In a pamphlet which he has forwarded to us, entitled "Plague Preventive Pills," he extols the virtues of a formula which he first prescribed in 1897 when the disease invaded Baroda, and which was brought to the notice of the medical profession in 1898 through the medium of the *Indian Medical Record*. Each pill contains the following ingredients: 2 grains of quinine, ¼ grain of ipecacuanha, ¼ grain of camphor, and ¼ minim of liquid carbolic acid, the dose being one pill night and morning. The Khan Bahadur explains the action of this combination of drugs by stating that they give increased powers of resistance against plague infection, the quinine serving as a tonic and the carbolic acid as an antiseptic, while the ipecacuanha acts on the liver and skin, and the camphor on the heart and skin. He asserts that an experience extending over nearly 11 years has confirmed his views as to the value of these pills in protecting against the infection of plague. A further advantage he mentions is that they are inexpensive, costing only 6 rupees per 1000, and selling at 40 for an anna. Some statistics are given in the pamphlet to show how plague epidemics have quickly subsided when the pills have been widely distributed among the people. When Mr. Sulemani appeared as a witness before the first Indian Plague Commission in 1899 he put forward some of these statistics. On reference to the Minutes of Evidence we find that the chairman, Sir Thomas Fraser, himself an eminent authority on materia medica and the action of drugs, questioned him closely as to the statistics and the pills, and we gather the impression that the Commissioners, after due inquiry, did not place the same value either on the pills or the statistics that Mr. Sulemani did. In his pamphlet the Khan Bahadur also advocates the employment of nim fumigation for preventing the spread of plague. The nim tree (*Azadarachta Indica*, natural order *Meliaceæ*) is commonly found in nearly every town and village in the Baroda State. After closing the doors and windows of the house fresh nim leaves are burnt in the rooms, giving rise to a smoke said to be fatal to fleas and insects. There is an oil in the leaves and fruit possessing insecticidal properties, on which account it receives mention in the Indian Pharmacopœia. We do not deny that the ingestion of the pills may have a mental effect and inspire confidence in the native mind in the presence of infection and perhaps in this way give some persons more powers of resistance, but we are of opinion that the destruction of the carriers of plague infection by nim fumigation is more likely to check the spread of plague than the administration of small doses of quinine, carbolic acid, and other drugs in the form of pills. If the taking of these pills is urged as a substitute for proper preventive medicine much harm may be done by the advice. Mr. Sulemani has also sent us a second pamphlet giving the measures which he urges to prevent the spread of cholera. These measures are three in number—namely (1) the repeated purification of local water-supplies by means of permanganate of potassium; (2) the daily administration of a mixture containing dilute sulphuric acid and peppermint water to those persons exposed to the disease; and (3) the taking of pills containing madar root bark, turmeric, black pepper, slaked lime, and ginger juice, by persons in the early stages of cholera or who may be suffering from diarrhœa. The pamphlet emphatically states that when treated early by these pills cholera cases seldom assume a serious aspect. It is pointed out that as the pills contain no opium they may be widely and gratuitously distributed in epidemic seasons without any fear of danger from overdosing. We have grave doubts as to the desirability of distributing in wholesale fashion these pills, or, indeed, any other drugs, for the home treatment of commencing cholera or other infectious disease without medical supervision, even admitting that the circumstances of India are exceptional, as medical assistance cannot always be readily obtainable in times of epidemic stress.

MR. GEORGE BERNARD SHAW ON THE MEDICAL PROFESSION.

Mr. George Bernard Shaw has gone far to wipe out of our memories the pain caused by the gallery of medical caricatures with which he once presented London under the title of "The Doctor's Dilemma," and which left the casual observer with the impression that the medical man of the metropolis must be considered a wizard, an idiot, or a humbug. At the Medico-Legal Society on Feb. 16th he was, we hope, quite serious, for a clearer and more sympathetic exposure of the wrongs of the medical profession has not often been pronounced. The occasion was the delivery of a socialist criticism of the profession which we print in this issue and commend heartily to the attention of all our readers, whether they be satisfied or dissatisfied with their relations to their patients and to the State. Mr. Shaw wants all medical men to look to the State for their living; we do not go so far, but we cannot help thinking that when most practitioners—whatever be their political colour—have looked squarely into the mirror which Mr. Shaw holds up they will be inclined to agree with him. The signs of the times are also in accord with his suggestion, it being evident that the number of medical men in State employ will be greatly increased in the near future. We have to thank Mr. Shaw for a very shrewd and kindly statement of some of the abuses to which our unorganised profession working under its present conditions is subject.

REGIONAL RACHISTOVAINISATION.

Avramesco of Bucharest has in two recent numbers of the *Revue Neurologique* called attention to the importance of remembering in this procedure that it is not the cord itself which is anæsthetised but the roots. In order to anæsthetise any particular region of the body by this method the stovaine must be injected at the level of emergence of the roots which innervate the area to be operated on. If the needle is introduced between the first and second lumbar vertebræ at the level of emergence of the first and second lumbar roots it is found that the inguinal regions become completely anæsthetic, while sensibility is still for a while unimpaired over the legs and genitalia. Frequently one or more roots above and below the level of injection are partially affected. Four levels may be chosen as comprising the ordinary sites of operative interference where this method may be employed—between the third and fourth or fourth and fifth lumbar vertebræ for anæsthesia over the external genitalia, perineum, and anus; between the first and second lumbar for the inguinal region and the lower extremities; between the ninth and tenth dorsal for the

abdomen below the level of the umbilicus; and between the sixth and seventh dorsal for the abdomen above the umbilicus.

A CORRESPONDENT writes, in connexion with the announcement in THE LANCET that the Prince of Wales had become a Fellow of the Royal College of Surgeons of England, that we ought also to call attention to the fact that His Royal Highness has been an honorary Fellow of the Royal Society of Medicine for a considerable time, having accepted nomination and signed the roll as a Fellow shortly after the formation of the Society.

ON March 4th a discussion will be opened at the Harveian Society of London, Stafford Rooms, Titchborne-street, Edgware-road, W., on the Early Diagnosis and Treatment of Cancer of the Stomach. The debate commences at 8.30 P.M. and will be opened by Dr. W. Hale White and Mr. B. G. A. Moynihan.

THE death is announced, on Feb. 19th, of Professor David James Hamilton, emeritus professor of pathology in the University of Aberdeen. We hope to publish details of his career in our next issue.

THE new member of the Paris Academy of Medicine is M. Meillière who received four more votes than his chief competitor, M. Grimbert.

THE ROYAL COMMISSION ON THE POOR-LAWS AND RELIEF OF DISTRESS.

I.

IN accordance with the words in our leading article last week we proceed to deal in some detail with the two great and important reports just issued by this Royal Commission. 14 members of the Commission, including representatives of all phases of qualification, have signed the Majority Report, which it will thus be seen is agreed to by a large majority subject to memoranda of modification, comment, or dissent with regard to matters of detail from five individuals. Four members of the Commission sign the Minority Report. In addition to the 18 signatories thus accounted for one member has died and his place has been filled during the progress of the Commission, and a highly valued member of the Commission, Mr. Charles Booth, has had to resign through ill-health, so that his signature does not appear.

The Commission was constituted by Royal Warrant on Dec. 4th, 1905, since which date it has held 209 meetings, of which 159 have been occupied by hearing the oral evidence of 452 witnesses. It has received the written evidence, in reply to questions, of about 900 other persons, it has appointed special investigators to report on particular subjects, and it has resolved itself into small committees which have visited unions all over England and Wales, attending meetings of boards of guardians, relief committees and distress committees, and have inspected institutions of all kinds, voluntary and otherwise, connected with the subject of inquiry, in England, Scotland, and Ireland. A small committee also has visited labour colonies in Belgium, Holland, Germany, and Switzerland. The work accomplished is a monument of the industry and zeal of those to whom the Government of their country entrusted it, and of that public spirit and devotion to duty which enable a Government to secure the voluntary assistance of such helpers in so arduous a task. The report itself, it may be said by the way, indicates the reliance of the members of the Commission upon a like spirit on the part of their fellow citizens, for assuredly its recommendations, if carried out, will entail a vast increase in the duties of those who already devote a large portion of their lives to administering local affairs without reward. In the circumstances it is hardly necessary to say that the Majority and Minority Reports of the Commission are weighty documents. They occupy respectively 645 and 512 pages in a Blue Book of 1238 pages, and it will consequently be understood that the analysis of the Majority Report which we append as a commencement of a consideration of the Commissioners' recommendations is of the briefest character, touching only upon the more salient points and particularly upon those of interest to medical readers. It will be borne in mind that the present report deals only with England and Wales and that the Poor-law systems of Scotland and Ireland will be described and criticised by the Commission hereafter.

THE MAJORITY REPORT.

Part I.—The report of the Commission bears the signatures of Lord George Hamilton (chairman), Dr. Denis Kelly, the Roman Catholic Bishop of Ross, Ireland, Sir Henry Robinson, Sir Samuel Provis, Mr. F. H. Bentham, Dr. A. H. Downes, the Rev. T. G. Gardiner, Mr. C. S. Loch, Mr. J. P. Macdougall, Mr. T. H. Nunn, the Rev. L. R. Phelps, Professor W. Smart, Mrs. Bernard Bosanquet, and Miss Octavia Hill. It is divided into nine parts, of which the first deals with the procedure adopted. As to this, from what has been said above it will be seen that the evidence taken from witnesses has been partly oral, and that thus it has been possible to test the witnesses' accuracy by cross-examination and to enable them to explain inconsistencies or obscure points, and partly in writing when this has not been possible; but in all cases the Commission lays stress upon the value of cumulative evidence rather than upon the expression given to individual opinion. The documentary evidence besides that referred to has included memoranda on 13 subjects supplied by the Board of Trade, reports upon the outdoor poor furnished by the Local Government Board, and various other statistical returns and reports obtained from appropriate sources.

Part II.—From the statistical survey of Poor-law problems contained in Part II. we learn that on July 1st, 1907, and Jan. 1st, 1908, there were relieved respectively 868,276 and 928,671 paupers, of whom 111,074 and 112,690 were insane paupers. Day counts which are employed for the compiling of these and other tables do not give the numbers relieved in a given year but are useful for comparison among themselves. Diagrams are supplied giving the seasonal fluctuations of pauperism, the annual fluctuations since 1872, and the relative pauperism of the two sexes. These show that the results achieved in recent years have not been encouraging. Cycles of depression have been compared with corresponding recurrent periods and tend to show that such diminution of the rate of pauperism per 1000 of the population as has been achieved under the Poor-law has not been an increasing rate but the reverse, and this in return for a steadily increasing expenditure. The Commission regards it as "unpleasant" to record that in spite of an annual expenditure of £60,000,000 on poor relief, education, and public health, we still have a vast army of persons quartered upon us unable to support themselves.

Part III.—This part contains a brief historical sketch of the Poor-laws down to 1834, with an account of the Commission appointed in 1832, and a summary of its principal findings and of the recommendations upon which the existing Poor-law has been based.

Part IV.—The report here devotes 150 pages to the consideration of the historical development of the various branches of the Poor-law and to recommendations based upon the observation of defects arising under present conditions. From this point the new policy which the Commission recommends is explained and developed, being finally elaborated and summarised in conclusion in Part IX.

Part V. contains the foreshadowing and initiation of that portion of the report which is of most direct interest to medical men. It deals with the history and position of medical relief as applied to the poor and makes suggestions of considerable moment.

Part VI. discusses the question of unemployment, the position of the able-bodied worker when work is unobtainable, and how he is to be helped.

Part VII. discusses the aid given voluntarily to the poor by "charities" and proposes that by means of voluntary aid councils and committees it shall be rendered more effective with less overlapping, and shall be given in coöperation with that supplied from "public assistance" sources.

Part VIII. deals with various matters, such as questions

of invalidity insurance, settlement, bastardy, vagrancy, and inebriety, and some questions of administration such as account keeping in institutions for the relief of the poor and compounding for rates.

Part IX. summarises and discusses in detail the recommendations which have preceded.

The fundamental suggestion contained in the nine chapters of the Majority Report is that for the Poor-law administered locally by boards of guardians shall be substituted a system of "Public Assistance" administered by a new local authority not "elected" *ad hoc* by the voters who elected their predecessors but "appointed," and not performing their functions over the areas now known as unions but over the areas governed by the councils of counties and of county boroughs, which councils will appoint the "public assistance authority." It is recommended that the authority may be appointed as to one-half from members of the council, and as to the other from persons outside the council, experienced in the local administration of public assistance or other cognate work. The number so appointed is to be determined by the Local Government ment Board and women are to be eligible. The work is to be carried out in detail by public assistance committees appointed by the public assistance authority and containing members nominated by district councils and by voluntary aid committees (the institution of which the Commission recommends) where these exist. For London the same system is to be employed, subject to recommendations for its application to the effect that the main area shall be that of the London County Council and the areas of the committees generally those of the existing unions. The public assistance authority in London is to be a statutory committee of the council with statutory duties, and is to be composed as to one-half of members of the council or outsiders nominated by the council, as to one-quarter of outsiders having qualifications for the work nominated by the council, and as to one quarter to be appointed by the Local Government Board with a view to securing the representation of important interests concerned, such as the legal and medical professions, employers, working men, and charitable institutions. The public assistance committees are to be constituted as in the counties, the borough councils nominating where district councils would do so outside the County of London. It is believed by the Commission that appointment will secure a better class of administrators, and that the system of election has not been successful in securing the return of the best men for the purpose, and that for this and for other reasons inherent to public local election the Poor-law guardians have failed to secure results commensurate with an increased and growing expenditure.

In Part IV., chap. 4, will be found a condemnation of the general workhouse by the Commission, which recommends the enlarged area "in view of the great difficulty of proper classification and treatment by classes so long as the present general workhouse continues to exist, the growing demand for specialised treatment of various classes of the dependent poor in institutions adapted to their various needs, and the advisability of equalising the burden of pauperism." The larger area will, it is believed, render easier the initiation and working of special institutions for the various classes to be relieved. It is recommended that in addition to specialised treatment in special institutions there should be periodic revision of all "indoor" cases and properly safeguarded powers to remove and detain certain classes of cases in institutions suited for them. The present system of out-relief is condemned chiefly with regard to its defective administration under present conditions as strongly as the general workhouse for indoor cases, and administrative principles and powers are suggested in view of the recommendation that "it should be a condition of out-relief that the recipients are living respectable lives in decent houses, and as a step towards this the public assistance authority should proscribe certain areas where the conditions of living are bad." The need for special treatment of the aged as distinct from those destitute from other causes is dwelt upon and recommendations are made for such treatment, both as regards institutional and other relief, with steps to secure adequate comfort in such cases combined with economy. The treatment of children is dealt with at some length, consideration being had for the importance of their early training with a view to their future citizenship, and stress is laid upon the necessity for better supervision of their upbringing outside the workhouse, their maintenance in institutions in which adult paupers are lodged being emphatically condemned. It is also laid down that "there should be more medical supervision of all children under the Poor-law both indoor and outdoor."

An important recommendation made in Part VII. and already referred to marks the opinion of the Commission that increased good may be effected by better organisation within the enlarged areas which it desires to see established, the object being the systematic, classified treatment of all cases of distress. This consists of the establishment of "voluntary aid" councils and committees corresponding with the "public assistance" councils and committees and acting in combination with them, so as to direct and organise the distribution of voluntary as distinct from rate-borne poor-relief. It is laid down that the functions of the voluntary aid committee should be to aid (1) persons in distress whose cases do not appear to be suitable for treatment by the public assistance committee; and (2) applicants for public assistance whose cases have been referred to the voluntary aid committee by the public assistance committee.

Part V. of the report of the Commission and the portions of Part IX. relating to this section of the Commission's work will be scrutinised with considerable interest by the medical profession. The Commission is of the opinion that of the services entrusted to the guardians it is perhaps in connexion with medical relief that the greatest development since 1834 has taken place, but that this has been accompanied by very little legislation with regard to the care and treatment of the sick poor, and it has dealt with the question of the medical relief of the poor under the Poor-law in relation to the larger question of all the various methods for supplying the poorer classes generally with medical relief. It recommends in the first place with regard to relief now given under the Poor-law that the inspection of medical relief by the central authority should be increased and that the Local Government Board's staff of inspectors should be augmented in order that outdoor and indoor relief may be under periodical inspection on behalf of the Board. Further recommendations are for the better remuneration of medical officers, the better accommodation of the sick, and the direct provision of medicines by the public assistance authorities so that the cost of these may not be a charge on the medical officer's remuneration. The nursing staff and its needs are also considered. The proper classification of the sick with adequate nursing is referred to as one of the reasons for the extended administrative areas proposed. Institutions for treating sick persons under the public assistance authorities "should be open for purposes of clinical instruction, subject to suitable safeguards," and improved methods of recording clinical treatment are recommended; more suitable provision for cases of pulmonary tuberculosis is also advised. It is further laid down that medical treatment should be more readily accessible to those in need of it, and that outdoor medical assistance should be conditional on the maintenance of a healthy domicile and good habits. Important recommendations designed to bring provident dispensaries and voluntary hospitals into some defined place for the help of the sick poor are as follows:—

> Certain classes of paupers, such as the aged and widows with young children, might be allowed to choose their own doctor from the list of doctors working with the provident dispensary; every doctor who joins the dispensary should give an undertaking to attend for a suitable fee any case of sudden and urgent necessity; it is hoped also that it may be possible ultimately to dispense with the services of the district medical officer whose duties will be shared by medical men practising in the district, and it is suggested that meanwhile arrangements might be made to retain the district medical officer on the staff of the provident dispensary.
>
> There should be coöperation between the public assistance authorities and the other agencies providing non-institutional treatment to the poorer classes. To this end especially (1) the out-patient departments of the voluntary hospitals should be reorganised so as to bring their work into coöperation with that of the new organisation of public assistance, and to prevent their benefits from being abused by the well-to-do; (2) the education and sanitary authorities should coöperate in the inspection of school children; any medical treatment, so far as it is provided out of the rates, to school children should be provided by the public assistance authority.

Attention is called at this stage of the report, *inter alia*, to the development under the existing Poor-law of the sale of patent medicines and of a class of medical practitioners working for "inconceivably low" remuneration.

The advice that medical assistance should be reorganised on a provident basis suggests that there should be systematic

coöperation between the public assistance authorities, the sanitary authorities, the education authorities, and the voluntary medical institutions, based on a clear definition of their respective functions. It is accordingly recommended that the public assistance authorities should undertake to coördinate and supplement the medical institutions of their areas, suggesting methods of coöperation with the sanitary authorities and the authorities in charge of voluntary hospitals; to organise an outdoor and provident medical service, including the provision of competent midwives; to develop a nursing service throughout their areas, preferably in connexion with voluntary nursing associations; to subscribe, when necessary, toward these purposes; and to arrange for the adequate supervision of and to report on the efficiency and adequacy of the medical institutions and medical service throughout their areas. To assist in carrying out such functions as the above it is recommended that the public assistance authorities shall appoint "medical assistance committees" from their members and from representatives of the health committees of the county or borough councils and of the local branches of the British Medical Association; the medical assistance committee to be able to coöpt representatives of local hospitals, nursing associations, dispensaries, and friendly societies; local medical assistance committees to be appointed by public assistance committees for carrying out the work in detail. Among the duties to be performed by these bodies in conjunction they are to organise coöperation between the public assistance institutions and voluntary hospitals. Further, they are to develop a system of paying and free cottage hospitals in conjunction with voluntary and endowed charities (these to include provision for confinement cases), and also they are to arrange schemes of coöperation between hospitals and provident dispensaries or outdoor medical service. The public assistance committee is also (1) "to require the local medical assistance committee in conjunction with the local doctor to map out their district into convenient medical districts or dispensary areas"; and (2) "to approach any free or provident medical institution, including private medical clubs, and to invite them to fall in with the scheme." The local authority is also to be enabled to subscribe to the provident dispensaries subject to the sanction of the Local Government Board and to other conditions.

With reference to the relation of the Poor-law to provident dispensaries it is recommended "that where any applicant for medical assistance is not a member of a provident society he shall apply to, and at once be treated by, a district medical officer." We note that in this connexion it is also advised that "with a view to enlisting the services of all competent medical practitioners in the locality of a provident dispensary the British Medical Association be requested to suggest a general scheme of fees and wage-limit to be applied by their local branches as local circumstances may suggest," and that "under such scheme all local medical practitioners consenting to come under it shall be on the list of dispensary doctors, and any applicant who is a member of the dispensary shall be entitled to select such practitioner as he may prefer." With regard to hospital treatment, the Commission recognises the difficulty which arises when persons not well to do, but who are not in ordinary circumstances subjects of charity or of Poor-law assistance, require medical or surgical aid and nursing of a costly character. Its recommendation with regard to this is "that arrangements should be made, where necessary, for the reception of patients in voluntary and general hospitals by the payment of their cost or by some other agreement between the public assistance committee and those in management of the hospital," and "that any medical practitioner attached to a provident dispensary may where the patient is a member of such dispensary and in need of institutional treatment recommend him for admission to the local public assistance infirmary, and in certain cases, where arrangements have been made, to a voluntary or general hospital."

The extracts given above from the Majority Report, necessarily brief as they are, are sufficient to show that the recommendations made are not only of grave importance to medical men whose practice is among the poor and the less well-to-do classes of society, but affect the practice in hospitals and the whole medical profession. An important memorandum by Dr. Downes upon the two reports issued by the Commission, one of which he has signed with the majority of his fellow Commissioners, makes this clear. Dr. Downes has signed the Majority Report for reasons which he records, but at the same time in a thoughtfully conceived document, to which fuller reference will be made hereafter, he records his misgiving at the proposed destruction of existing agencies and the transference of relief work to a complicated and, as he considers, unworkable system of machinery. He has much that deserves consideration to say upon a scheme of medical relief which he regards as too complicated for adoption in practice and too dependent on agencies beyond the control of the Poor-law. He holds the view, moreover, that some of the problems affecting the medical profession in its relation to the functions proposed for it should be considered by some body more representative of the interests concerned and more directly equipped to deal with detailed difficulties than the Commission.

In the above brief summary of the recommendations of the majority of the Commission whose report has been spoken of as the report of the Commission, we have intentionally omitted for the present at all events such interesting subjects as the methods recommended for dealing with unemployment, and all but brief reference to the functions of the central authority. This, it may here be noted, it is proposed to strengthen with a view to the combination between "public assistance" and "voluntary aid" by the joining of the Charity Commission under the new title of the Charities Commission to the Local Government Board, both to be represented in Parliament by the President of the latter.

THE LONDON SCHOOL OF CLINICAL MEDICINE.

THE first annual dinner of the London School of Clinical Medicine was held on Feb. 19th at the Savoy Hotel, London, with Mr. P. A. NAIRNE in the chair, in the place of Lord Robert Cecil, unavoidably absent through illness. The CHAIRMAN, in proposing the toast of the school, gave an interesting historical account of the Seamen's Hospital Society, with which the school is connected, and stated that as chairman of the committee of the Seamen's Hospital Society he was expressing the view of that committee when he said that in undertaking the public duty of giving an opportunity to men in practice of continuing their medical studies the society had a right to appeal to the public for means to carry on the work.

Sir WILLIAM H. BENNETT, who responded to the toast, said that the happy idea of forming the London School of Clinical Medicine originated with Dr. Guthrie Rankin, who was struck with the fact that there were on the south side of the Thames certain hospitals and institutions which contained within their walls patients representing types of most of the ills that man was heir to and most of those he brought on himself. Dr. Rankin also recognised that there were attached to those institutions teachers well qualified to undertake post-graduate instruction, that was to say, the instruction of qualified men who were anxious to keep themselves abreast with the times and to improve the occasion as the occasion arose. That is to say, that there was on the one hand an enormous amount of clinical material which could be used as already suggested, whilst on the other hand there was a large amount of educational talent that could use the material if suitable opportunities were afforded. So it came about that under the ægis of the Seamen's Hospital Society the London School of Clinical Medicine came into existence. The help of Lord Lochee was recognised by all in helping forward the scheme and great assistance had been rendered by that prince of hospital secretaries, Mr. Michelli. Sir William Bennett then proceeded to point out that the London School of Clinical Medicine was not a doctor's scheme to benefit doctors, but it was a scheme which was instituted and maintained for the good of the public, like all post-graduate schemes were. Further, the school was not established with any idea of rivalling any other institution. Those who had brought the scheme to completion were well aware that there were in London other post-graduate institutions and the London School of Clinical Medicine was instituted with the intention of adding to the facilities of post-graduate teaching in the metropolis, in which place such teaching was so

sadly defective. It might perhaps be news to the audience that London was unknown in any part of the civilised world as a place where post-graduate teaching took place—even the Americans had hardly heard of there being anything approaching post-graduate work in this country; the Americans knew Berlin, Paris, Leipsic, and Budapest, but they were quite ignorant of the post-graduate work being carried on in London, and it was to help towards remedying this defect that the London School of Clinical Medicine had been instituted. The school had been in being for three years and during that time there had passed through its courses about 300 students; it was now in a financial position entitling it to be said that the institution was within a very short distance of paying its working expenses. Those who knew the difficulty of starting an institution of that kind and the trouble of carrying it on would recognise that that was by no means a bad result, and, in fact, it was a better result than could have been expected in the circumstances. Sir William Bennett then went on to show that though the London School of Clinical Medicine was situated at Greenwich, yet the distance from the centre of London was not so great that it afforded any real difficulty to those desirous of participating in the benefits to be derived from joining the school. The London School of Clinical Medicine was now an accomplished fact, it was doing good work, and the Seamen's Hospital Society had helped it and was assisting it in a most generous way. Those responsible for the school had waited for three years before announcing the success of the institution. During that time much spade work had been done and the school had attracted a large number of students, and the financial position was so sound that there was ample scope for expansion, so that if there were any gentlemen present acquainted with one or more millionaires they might induce one of them to endow the school and thereby benefit not only clinical medicine but the community at large. Sir William Bennett concluded by thanking those present for the cordial way in which they had honoured the toast.

Dr. GUTHRIE RANKIN, in proposing the toast of "The Guests," said that the presence of so many friends and well-wishers to the school at that meeting would encourage those who were in charge of the school to make greater efforts towards fulfilling the objects for which it was formed. He emphasised the point that the school was complemental to the other post-graduate institutions in London. He considered that the appeal for assistance was well founded, and especially on the ground that the work was a national one.

Lord RIDLEY, who responded to the toast, observed that it must be difficult for medical men after qualifying to keep in contact with the advances of science and to be ready, as they always were, to treat the ailments of their patients in the best manner possible, and the London School of Clinical Medicine afforded them an opportunity for the post-graduate study that was required.

Sir WILLIAM S. CHURCH, who also replied to the toast, said that it was impossible for the medical schools dealing with the qualification of students for passing their examinations to treat fully and adequately many specialties with which the successful practitioner of medicine had to be acquainted. The result was that it had become necessary for a large amount of medical education to be received after a man had become qualified to practise. The qualification to practise fitted a man to receive higher instruction and that was afforded by those schools which called themselves post-graduate institutions. Those schools were now regarded as a necessity to enable men to attain a full knowledge of their profession.

The toast of "The Chairman" was proposed in a sympathetic speech by Sir MALCOLM MORRIS, and after a few words in reply from the Chairman the company separated.

Among those present in addition to the speakers were Lord Lochee, Admiral Sir J. Durnford, K.C.B., Admiral G. Neville, C.V.O., Sir Thomas Smith, K.C.V.O., Sir Henry Burdett, K.C.B., Canon Duckworth, Colonel E. M. Wilson, C.B., Colonel C. R. Kilkelly, C.M.G., Surgeon-General Branfoot, C.I.E., Mr. H. W. Lucy, Sir William Collins, M.P., Sir W. Watson Cheyne, C.B., Dr. J. F. Goodhart, Dr. F. W. Hewitt, M.V.O., Mr. Mayo Robson, Dr. StClair Thomson, Dr. Squire Sprigge, Dr. Dawson Williams, Professor Starling, Mr. L. A. Bidwell, Dean of the West London Post-Graduate College, and Mr. C. C. Choyce, Dean of the London School of Clinical Medicine.

NATIONAL TUBERCULOSIS CONFERENCE.

ANY help which an enlightened public can give to medical men in their fight against the ravages of tuberculosis will receive the support of the medical profession as a body. Such help can be given, and is being given, by numbers of earnest workers, but much still remains to be done to make the general public realise that if tuberculosis is to be stamped out every individual must take an active interest in the campaign against the common foe. The National Conference on Tuberculosis, which was opened at the Caxton Hall, Westminster, S.W., under the presidency of the Countess of Aberdeen, on Feb. 16th, is to be congratulated on its work because its members recognisd that the essential for the attainment of this end is education. Speaker after speaker emphasised this point. Archdeacon Sinclair, who presided at the opening meeting, in asking Sir William Treloar to open the conference said that medical men had done their utmost in fighting tuberculosis and the general public must now do their share of the work. Of the total death-rate one-tenth could be traced to the disease and he looked with hope to the efforts of teachers, district visitors, and the like to sweep away the ignorance of the poor in regard to this matter. Sir William Treloar said he was told that something like 90 per cent. of our cripples owed their infirmity directly or indirectly to tuberculous disease, but while he and others had done something to help these sufferers the medical side of the question remained untouched. He hoped that some philanthropist would come forward and help such cases. Sir Francis Channing, M.P., expressed the deep gratitude which everyone who was interested in the subject felt towards Lady Aberdeen, the President of the Congress, for the active interest she had taken in the matter. The Rev. H. Russell Wakefield, Surgeon-General Evatt, C.B., and Mr. F. V. Fisher also addressed the meeting and, in common with previous speakers, emphasised the necessity for stimulating public opinion and thus giving our legislators the power to deal effectively with this most vital matter. The wide scope of the conference, which was continued on Feb. 17th, 18th, and 19th, was shown by the variety of papers read.

In connexion with the conference an interesting exhibition of drugs, foods, wearing apparel, models of sanatoriums, and other matters was held and demonstrations of specimens of tuberculous meat were given each day. The exhibition was designed to illustrate the various methods in use, either curative or prophylactic, for dealing with tuberculosis, and included models of sanatoriums, foods, and drugs. Not the least instructive section of this exhibition was that containing the models of the Seaforth Sanatorium, Maryburgh, near Dingwall, Ross-shire; the Kelling Sanatorium, Holt, Norfolk; and the Maitland Sanatorium, Peppard Common, Oxford. These institutions are for the poorer classes. In the same room were shown exhibits from the Lister Institute of Preventive Medicine consisting of cultures of tubercle bacilli, and an apparatus employed in the bottling of tuberculin. Models were also shown illustrating the microscopical appearance of sputum coughed up by a consumptive patient. Messrs. Allen and Hanburys, Limited, 37, Lombard-street, London, E.C., had an interesting exhibit of tuberculin both in its diagnostic and therapeutic form, and they also showed a selection of their surgical and invalid appliances, including sputum cups and pocket sputum flasks. The foods prepared by this firm included the Allenburys Diet, a pancreatised milk and cereal food; "Sauerin" for making lactic fermented milk, and their Byno and Bynol preparations. Messrs. Oppenheimer, Sons, and Co., Limited, 179, Queen Victoria-street, London, E.C., besides showing their well-known specialities, made a feature of their "Lactigen," a liquid preparation of a pure culture derived from the Metchnikoff Bulgarian lactic acid bacillus, and also of Roboleine, a nutritive and digestive food containing a combination of red bone marrow, the expressed juice of calves' rib bones, and cream of malt with hypophosphites. Messrs. Brand and Co., Limited, South Lambeth-road, London, S.W., showed a large variety of their various preparations, while the Liebig Extract of Meat Company, 4, Lloyd's-avenue, London, E.C., exhibited their Oxo, Lemco, and other specialities. The Virol Co., 152, Old-street, London, E.C., the Maltine Manfacturing Co., 25, Hart-street, Bloomsbury, London, W.C., the Miol Manufacturing Co., 82, Southwark Bridge-road, London, S.E., and

the Grape Juice Co., 7, Great Tower-street, London, E.C., had very interesting exhibits, as did also Messrs. Schweppes, Limited, 64, Hammersmith-road, London, W., Bendles Meat Port Syndicate, 41, Seething-lane, London, E.C., and the Angier Chemical Company, 32, Snow-hill, London, E.C. Messrs. Scott and Bowne, 10, Stonecutter-street, London, E.C., showed their well-known Scott's Emulsion. Mellin's Food Company were represented and the Aylesbury Dairy Co., Limited, St. Petersburgh-place, Bayswater, London, W., had a large exhibit, including various kinds of Koumiss. Dried milk was represented by the Glaxo Company, St. John's House, Minories, London, E.C.

Messrs. Down Brothers, Limited, 21, St. Thomas's-street, London, S.E., showed a fine collection of surgical instruments and apparatus for diagnosis and general operative surgery, more especially for tuberculous lesions. An exhibit which attracted some attention was the "Patent Zymotic Face Protector," a shield made of aluminium with a transparent window designed to protect the face of the medical attendant or nurse from infectious matter or involuntary expectoration in diphtheria, fever, and other cases. This was shown by Messrs. Garrould, 150, Edgware-road, London, W.

MEDICINE AND THE LAW.

Accident Insurance and Pneumonia Resulting from a Hunting Accident.

A CASE of considerable medical and legal interest recently occupied the attention of the Court of Appeal. The personal representative of a deceased gentleman named Etherington claimed against the Lancashire and Yorkshire Accident Insurance Company under a policy insuring the holder against accidental death only. Difficulty arose as to the interpretation and application of the phrases used in the policy with the intention of limiting its benefits to death by accident, and the arbitrators to whom the dispute was referred stated a case upon which argument took place before Mr. Justice Channell, who decided in favour of the claimant under the policy, a decision which has now been upheld. The terms of the policy secured payment of £1000 if the deceased "should sustain any bodily injury caused by violent, accidental, external, and visible means," if it should "within three calendar months from the occurrence of the accident causing such injury directly cause the death of the insured." The policy also contained this stipulation: "Provided always and it is hereby as the essence of the contract agreed as follows: That this policy only insures against death where accident within the meaning of the policy is the direct or proximate cause thereof, but not where the direct or proximate cause thereof is disease or other intervening cause, even although the disease or other intervening cause may itself have been aggravated by such accident, or have been due to weakness or exhaustion consequent thereon, or the death accelerated thereby." The history of the case as set out by the arbitrators was that the deceased suffered from influenza late in January but recovered, and on Feb. 13th went hunting, as to which they found as facts that neither the influenza nor the ordinary exposure of driving to the meet and riding to hounds caused him to suffer any ill effects, but that about 12.30 P.M. he was thrown when jumping a fence in which was a hidden strand of wire. He fell heavily on his left shoulder and side, getting wet to the skin at the same time, but suffered no "trauma or wound to the body or lung." He afterwards rode home, meeting his second horse in the course of the ride and proceeding homewards upon it at a trot, so that he arrived about 2 P.M. The arbitrators found that he thus took the best course and one rendered inevitable by the accident, but that the effect of the shock was to lower his general vitality, and that the ride home lowered it still further. They proceeded to find further that "the cumulative effect of both these causes, but not the effect of either exclusively of the other, was to lower the general vitality of his body to an extent which made the onset of the pneumococcus possible and that onset thereupon took place one and a half hours after the accident. The pneumococcus is the germ which causes the disease known as pneumonia." The arbitrators further sketched in accordance with the medical evidence before them the course of development taken by pneumonia in terms which will be found in the *Times* of Feb. 5th, whence the above extracts have been quoted, and went on to state that "on Feb. 14th the assured, against the opinion of his medical attendant, being still in great pain, took a journey occupying one hour and a half by train to London. He then transacted his business until 6 P.M. when he developed the first physical signs of pneumonia." The arbitrators further "found as facts" that the deceased at 6 P.M. on Feb. 14th was suffering from fully developed pneumonia, from which he died on Feb. 20th, and that "the journey to London and a day's work in the condition in which he then was tended to, and as a fact did, impair his vitality still further and diminish his resistance to the pneumococci, so increasing the severity of the attack." The question for the court was whether the above findings entitled the plaintiff to recover under the terms of the policy. Mr. Justice Channell, before whom, as has been stated, the matter was first argued, held, though not without doubt, that the findings had brought the facts of the case within the terms of the policy, and that the death was caused by an accident within the meaning of the policy, and gave judgment accordingly for the plaintiff. Against this judgment the company appealed and after argument on both sides it was affirmed by the Court of Appeal. Lord Justice Vaughan Williams in delivering judgment was of opinion that the policy was not easy to construe, but he laid emphasis on the principle that in interpreting any really ambiguous clause in a policy of insurance of any kind the construction should be against rather than in favour of the insurance company. He pointed out that to uphold the contentions of the company would tend to limit accidental death under such a policy to what he termed "death on the spot," and he upheld the view of Mr. Justice Channell that the "disease or other intervening cause" meant something new and independent of the accident. He did not agree with the contention that the intervening cause might be dependent or independent. "The appellants contended that it meant some new cause, but that it mattered not whether it was dependent or independent. He did not agree with that. When it was a dependent cause one had a right to say that the direct or proximate cause did not consist merely of the immediate results of the accident but included all those things which could fairly be considered as the usual attendant results of the particular accident in question." ..... "He thought that it was impossible to limit the proximate cause of death to one fact of the accident. The truth was that an accident ordinarily according to its nature produced certain consequences, and if death resulted as the final step in those consequences the whole train of events was the proximate cause of the death which resulted. In his opinion 'intervening cause' in the policy meant a cause independent of the accident and its ordinary consequences. Notwithstanding the fact that it would be natural to construe the words 'weakness or exhaustion consequent thereon' as covering a case where weakness or exhaustion was brought about by the accident itself, he was of opinion that in the policy those words ought not to be so construed." Lord Justice Farwell and Lord Justice Kennedy delivered judgments to a like effect and the appeal was dismissed. The importance of the case to the medical profession lies in the full recognition accorded by it to the evidence of medical experts and to statements as of fact founded upon the recent discoveries of medical science rather than upon specific observation of the phenomena described in the subject of the inquiry. 20 years ago in the case of Isitt and Others *v.* The Railway Passengers Assurance Company (22 Q. B. D. 504) a claim was made under a policy providing against "death from the effects of injury caused by accident," where a man had suffered from an accident which dislocated his shoulder and had died from pneumonia. According to the description of his case then laid before the court he had been made weak and susceptible to cold and had "caught cold." It was held that the executors could recover because the policy drew a distinction between the accident and its effects, that it implied that the injury must be caused "immediately" by the accident, but that the death need not be "immediately" caused by the accident. This decision, as was suggested in argument in Mr. Etherington's case, was probably responsible for the wording of the policy granted to him, and it very nearly lost to his representative the benefit which he intended to secure. Perhaps if he had fully understood the possibility of death following a hunting accident in the manner in which it afterwards occurred to

himself and the interpretation which the company would endeavour to put upon the clause in question he would have refused to take the policy.

The Education of the Mentally Defective.

An interesting test case with regard to the education of mentally defective children was tried in Birmingham the other day. The parent objected to his child being forced to go to one of the council's special schools for mentally defective children. He urged that the child was not mentally defective and was receiving proper education at a private school. It was proved that the child was mentally defective and suffered from word-blindness, and it was shown that the father was not in a position to provide the child with a tutor. On the evidence it was decided that the child must attend a school selected by the parent and approved by the authorities, or failing such selection by the parent the child must attend a school selected by the authorities.

Public Health.

ANNUAL REPORTS OF MEDICAL OFFICERS OF HEALTH.

Maldon Rural District.—Dr. J. C. Thresh, in his recent annual report, furnishes a sort of retrospect of the progress made in this district during the 20 years for which he has been medical officer of health, and especially in the matter of water-supply there is every reason for congratulation. This rural district council is one of the very few district councils which have attempted to deal with the housing of agricultural labourers by erecting cottages under the Housing of the Working Classes Act. Six cottages were, Dr. Thresh states, erected as cheaply as the requirements of the Local Government Board would allow. The rents amount to £54 12*s.*, and the repayment of the loans and expenses to £96 15*s.* 9*d.*, leaving a balance which calls for a rate of 2¾*d.* in the £. In another 26 years this loan will be repaid and the rents may, it is thought, relieve the rates by 2*d.* in the £. Notwithstanding this, Dr. Thresh thinks that the experiment is not sufficiently satisfactory to justify the erection of further houses unless it can be done with greater facility and the repayment of the loan extended over a longer period. He does not, however, tell us much about the construction of these cottages or the period over which repayment has been spread—probably it is 60 years. Apparently houses were erected at a less cost at Tiptree, the cost per cottage ranging from £162 on light land to £180 on heavy land (the cost of land excluded in each instance). If the cost of land were included Dr. Thresh estimates the costs at £182 and £200 respectively, and after comparing total costs, rental and rates, he concludes that 12 cottages could be erected on the Tiptree lines for the same annual cost to the parish as six cottages on the Bradwell type. It would have been useful had Dr. Thresh specified the differences between the two cottages and told us how, if at all, the local by-laws, if any, affected the situation. As it is, it is difficult to determine whether the data are strictly comparable or whether cost of land, materials, and labour differed. However, Dr. Thresh thinks that the action of the district council in erecting the Bradwell cottages exercised a good effect in that it stimulated private enterprise and the provision of 12 cottages. A similar stimulus appears to have been given in the Chelmsford rural district by a threat made to erect cottages under the Housing of the WorkingClasses Act. Dr. Thresh again returns to the question of isolation hospitals, reiterating some of the comments contained in his last annual report. The existing isolation hospital had, he states, cost between £400 and £500 per annum, an expenditure which would, he says, enable the district council to build 60 to 120 excellent cottages. This district is in the proper season visited by pea-pickers who apparently give rise to some trouble. Dr. Thresh does not think that by-laws would be of any avail in helping to control these wanderers, although he is of opinion that the contractors should be compelled to provide some little accommodation for the workpeople. We do not quite follow Dr. Thresh's contention in this matter, as our experience suggests that by-laws may be of some value. The utility of the London County Council (General Powers) Act, 1907, was illustrated in this district during 1908 by the detection of suspicious cases of tuberculosis in one of the cowsheds.

Chelmsford Rural District.—In the annual report relative to this district Dr. Thresh draws attention to the difficulty which sometimes exists in providing cow's milk for the inhabitants of rural districts, and this notwithstanding the fact that milk is sent to London therefrom. He points out that milk may be sent to London from a farm and yet the people living near may be using tinned milk produced abroad. This difficulty is not confined to the Chelmsford rural district and it is one which is worthy of general consideration. Pea-pickers are also a trouble in this district and they are found sleeping in granaries, open sheds, and mangers, while in one instance married quarters were provided in a cleaned-out pig-sty.

Short Heath Urban District.—Mr. John T. Hartill reports that the education committee of the county council, which is the education authority for this district, has issued regulations for the guidance of managers and teachers under its control, and it would appear that certain of its regulations are not in harmony with the views held by Mr. Hartill relative to the control of measles and whooping-cough. Mr. Hartill points out that the statute which brought about the medical inspection of school children "does not confer powers in supersession of those heretofore exercised generally in a public health sense by sanitary authorities under previous enactments," and he proposes, we gather, to get the regulation with which he is not in agreement altered, since he regards it as unworkable. We are afraid that differences of opinion such as the one here in question are hard to avoid where one person regards disease from the point of view of the whole community, and the other from that of the school or scholars only, but they may be largely avoided by friendly conference between the local and county medical officers of health.

Buckingham Rural District.—Buckinghamshire is an important milk-producing county and consequently all legislation directed towards the greater purity of this important commodity has interest for the medical officers of health of the county. Dr. P. L. Benson, in referring to the powers possessed by the London County Council of taking samples of milk at the metropolitan railway stations, expresses the opinion that the price of milk must be raised by all restrictions which tend to augment the cost of production and that if the public demands a perfectly clean milk it must be prepared to pay an enhanced price. This is theoretically sound, but as a matter of fact competition will result in keeping prices very much where they are, as the cost of elementary cleanliness is, after a proper routine has been firmly established, not very great. Dr. Benson has himself brought about a marked improvement in certain of the cowsheds in his district, as is shown by the photographs which accompany his report. Attention is drawn in the report before us to a matter which certainly requires attention. According to Dr. Benson the milk producers are not allowed to fasten or to seal their churns or vessels in which milk is sent to London, and if this is so the milk may be tampered with and polluted after it has left the producer. Whether Dr. Benson is correct or not in this estimation of the attitude of the railway companies there is no doubt as to the necessity for better control of milk churns during passage by rail. It is a common event to see the milk splashed over the lids during movements on the platform and it is rare to see the covers properly sealed. We were under the impression that some of the railway companies raised no objection to sealing provided the "tare" of the cans is duly marked on them so that the contents can be ascertained by weighing and possibly Dr. Benson may be able to effect some improvement in this direction.

VITAL STATISTICS.

HEALTH OF ENGLISH TOWNS.

IN 76 of the largest English towns 8921 births and 5709 deaths were registered during the week ending Feb. 20th. The annual rate of mortality in these towns, which had been equal to 18·7 and 17·5 per 1000 in the two preceding weeks, rose again to 18·1 in the week under notice. During the first seven weeks of the current quarter the annual death-rate in these towns averaged 17·4 per 1000, and in London the mean rate during the same period was equal to 17·8. The lowest recorded annual death-rates in these towns during last week were 8·4 in Walthamstow, 9·3

in Leyton, 9·4 in Bournemouth, and 10·7 in Devonport; the rates in the other towns ranged upwards, however, to 24·5 in Warrington, 24·8 in Liverpool, 25·2 in St. Helens, 25·5 in Bury, and 31·1 in Wigan. In London the recorded death-rate during the week was equal to 18·7 per 1000. The 5709 deaths from all causes in the 76 towns last week showed an increase of 191 upon the number returned in the previous week, and included 515 which were referred to the principal epidemic diseases, against 494 and 453 in the two preceding weeks; of these 515 deaths, 274 resulted from measles, 82 from whooping-cough, 69 from diphtheria, 36 from scarlet fever, 28 from diarrhœa, and 26 from "fever" (principally enteric), but not one from small-pox. The deaths from these epidemic diseases, in the week under notice, were equal to an annual rate of 1·6 per 1000, against 1·6 and 1·4 in the two preceding weeks; in London the recorded rate from these diseases was equal to 1·7 per 1000. No death from any of these epidemic diseases was registered during last week in Burnley, Wallsall, York, Northampton, Devonport, or in nine other smaller towns; the annual death-rate therefrom, however, ranged upwards in the other towns to 5·5 both in St. Helens and in Aston Manor, 6·5 in West Hartlepool, and 7·2 in Warrington. The fatal cases of measles in the 76 towns, which had been 217, 190, and 188 in the three preceding weeks, increased to 274 in the week under notice, and caused annual death-rates equal to 4·9 in St. Helens, 5·5 in Aston Manor, 5·9 in West Hartlepool, and 6·5 in Warrington. The 82 deaths from whooping-cough also showed an increase upon the numbers returned in the two previous weeks; the highest annual rates from this disease were 1·3 in Norwich, 1·9 in Tynemouth, and 2·3 in Wigan. The fatal cases of diphtheria, which had been 80 and 79 in the two preceding weeks, further declined last week to 69; they showed the highest proportional fatality in Reading, Leyton, and Derby. Diphtheria caused 27 deaths in London and its suburban districts. The 36 fatal cases of scarlet fever showed a decline from the numbers in the two previous weeks, and included four in Birmingham and King's Norton, four in Liverpool, four in Manchester, and 11 in London and its suburban districts. The 28 deaths attributed to diarrhœa showed a considerable decline and were fewer than in any previous week of this year. The 26 deaths referred to "fever" only exceeded by two the low number in the previous week, but included five in Manchester, three in Bolton, three in Sheffield, and two in Grimsby. The number of scarlet fever patients under treatment in the Metropolitan Asylums and the London Fever Hospitals, which had steadily declined in the seven preceding weeks from 3557 to 3002, had further decreased to 2910 at the end of last week; the new cases of this disease admitted to these hospitals during last week were 273, against 339, 312, and 289 in the three preceding weeks. The registered deaths in London referred to pneumonia and other diseases of the respiratory organs, which had been 377, 556, and 441 in the three preceding weeks, rose again to 467 in the week under notice, and exceeded by 58 the corrected average number in the corresponding week of the five years 1904–08. The causes of 54, or 0·9 per cent., of the deaths registered in the 76 towns during the week were not certified either by a registered medical practitioner or by a coroner. All the causes of death registered during the week under notice were again duly certified in Bristol, West Ham, Newcastle-on-Tyne, Hull, Leicester, and in 50 other smaller towns; the 54 uncertified causes of death in the 76 towns last week included, however, 13 in Liverpool, eight in Birmingham, five in Manchester, and three in Sheffield.

HEALTH OF SCOTCH TOWNS.

The annual rate of mortality in eight of the principal Scotch towns, which had been equal to 18·5 and 18·2 per 1000 in the two preceding weeks, rose to 19·8 in the week ending Feb. 20th. During the first seven weeks of the current quarter the annual death-rate in these eight towns averaged 18·6 per 1000, and exceeded by 1·2 the mean rate during the same period in the 76 large English towns. Among the eight Scotch towns the death-rate during the week under notice ranged from 14·6 and 17·8 in Leith and Edinburgh to 22·8 in Dundee and 23·5 in Perth. The 706 deaths from all causes registered in the eight towns last week showed an increase of 54 upon the number returned in the previous week, and included 82 which were referred to the principal epidemic diseases, against 77 and 73 in the two preceding weeks; of these 82 deaths, 41 resulted from whooping-cough, 15 from diarrhœa, 12 from diphtheria, five from "fever," five from scarlet fever, and four from measles, but not one from small-pox. These 82 deaths were equal to an annual rate of 2·3 per 1000, exceeding by 0·7 the mean rate during the week from the same diseases in the 76 English towns. The fatal cases of whooping-cough in the eight Scotch towns, which had been 42 and 49 in the two preceding weeks, declined again to 41 in the week under notice, and included 22 in Glasgow, seven in Edinburgh, and four each in Dundee, Aberdeen, and Paisley. The 15 deaths attributed to diarrhœa showed an increase of six upon the number returned in the previous week, and included six in Glasgow, three in Dundee, and two each in Edinburgh, Aberdeen, and Paisley. The 12 fatal cases of diphtheria also showed an increase; nine were recorded in Glasgow, two in Aberdeen, and one in Dundee. All the five deaths referred to "fever" occurred in Glasgow; three were certified as enteric fever and two as cerebro-spinal meningitis. Four of the five fatal cases of scarlet fever were returned in Glasgow, and of the four deaths from measles three occurred in Aberdeen. The deaths referred to diseases of the respiratory organs in the eight towns, which had been 111, 131, and 137 in the three preceding weeks, further rose last week to 148, but were 36 below the number returned in these towns in the corresponding week of last year. The causes of 25, or 3·5 per cent., of the deaths registered in the eight towns last week were not certified; in the 76 large English towns the proportion of uncertified causes of death last week did not exceed 0·9 per cent.

HEALTH OF DUBLIN.

The annual rate of mortality in Dublin, which had been equal to 24·3 and 25·1 per 1000 in the two preceding weeks, further rose to 25·8 in the week ending Feb. 20th. During the first seven weeks of the current quarter the death-rate in the city averaged 24·7 per 1000, whereas the mean rate during the same period did not exceed 17·8 in London and 17·5 in Edinburgh. The 197 deaths of Dublin residents from all causes during the week under notice showed a further increase of five upon the numbers in the two preceding weeks, and included ten which were referred to the principal epidemic diseases, against 11 and 13 in the two previous weeks. These ten deaths were equal to an annual rate of 1·3 per 1000; the rate from these epidemic diseases in the same week was equal to 1·7 in London and to 1·5 in Edinburgh. Of the ten deaths from these epidemic diseases in Dublin last week four resulted from measles, two from diphtheria, two from whooping-cough, and one each from "fever" and scarlet fever, but not one either from diarrhœa or small-pox. The fatal cases of measles exceeded the number in the previous week, while those of whooping-cough and "fever" showed a decline. The 197 deaths registered during the week included 33 of infants under one year of age and 61 of persons aged upwards of 60 years; the deaths of infants showed a decline, but those of elderly persons were more numerous than in the previous week. Five inquest cases and five deaths from violence were registered last week; and 83, or 42·1 per cent., of the deaths occurred in public institutions. The causes of five, or 2·5 per cent., of the deaths registered in Dublin last week were not certified; in London the causes of all but three of the 1731 deaths were duly certified, while in Edinburgh 8·2 per cent. of the causes of death were not certified.

THE SERVICES.

ROYAL NAVY MEDICAL SERVICE.

THE following appointments are notified:—Fleet-Surgeons: P. M. May to the *Goliath;* H. X. Browne to the *Sutlej*, on recommissioning; B. F. Parish to the *Invincible*, on commissioning. Staff-Surgeons: E. S. Tuck to the *Hannibal;* M. Cameron to the *Crescent*, temporary; J. H. Fergusson to the *Isis*, undated; E. G. E. O'Leary to the *Donegal*, on recommissioning. Surgeons: W. T. Haydon to Royal Marine Artillery, Eastney; E. Wilkinson to the *Merlin*,

additional, to date March 1st, and on recommissioning; L. F. Cope to the *Invincible*, on commissioning; W. M. Blatchford to the *Donegal*, on recommissioning.

The undermentioned has been appointed Surgeon:—Herbert Leith Murray (dated Feb. 15th, 1909).

In accordance with the provisions of Her late Majesty's Order in Council of April 1st, 1881:—Fleet-Surgeon Charles William Sharples has been placed on the retired list with permission to assume the rank of Deputy Inspector-General of Hospitals and Fleets (dated Feb. 17th, 1909).

ROYAL ARMY MEDICAL CORPS.

The undermentioned to be Lieutenants on probation (dated Jan. 30th, 1909):—Harry Sherwood Ranken, John Alexander Manifold, Percy Stanley Tomlinson, William Henry O'Riordan, Charles Thornton Vere Benson, William Porter McArthur, Ernest Charles Lambkin, Alfred William Bevis, Francis William Murray Cunningham, Eustace Macartney Parsons-Smith, Oswald William McSheehy, Samuel Slimmon Dykes, James Joseph Dillon Roche, Rupert Henry Nolan, Robert Cecil Priest, Michael White, Robert Colin Paris, Philip Gordon Moss Elvery, Herbert Fletcher Joynt, Maurice Joseph Williamson, Alexander Stuart Monck Winder, William Mathieson, James Russell Yourell, James Rowland Hill, Charles Leopold Franklin, Harry Rumsey Edwards, Alexander Dickson Stirling, William Benton Rennie, John Beckton, and George Pritchard Taylor.

Lieutenant Arthur G. Cummins is seconded for service with the Egyptian Army (dated Jan. 21st, 1909).

TERRITORIAL FORCE.

Infantry.

6th Battalion, The Prince of Wales's (North Staffordshire Regiment): The undermentioned officers from the 2nd Volunteer Battalion are appointed to the battalion, with rank and precedence as in the Volunteer Force (dated April 1st, 1908): Surgeon-Lieutenant-Colonel Herbert John Fausset and Surgeon-Captain Edward Churchill Stack.

Royal Army Medical Corps.

Highland Mounted Brigade Field Ambulance: Lieutenant-John W. Mackenzie to be Captain (dated Jan. 23rd, 1909).

3rd London (City of London) Field Ambulance: Lieutenant Hubert C. Phillips to be Captain (dated Jan. 9th, 1909).

2nd Lowland Field Ambulance: The promotion of Captain Peter F. Shaw to the rank of Major bears date April 1st, 1908. Captain John McKie to be Major (dated April 1st, 1908).

4th Northern General Hospital: Captain Devereux John Gregory Watkins to be Major (dated Nov. 3rd, 1908).

South Wales Mounted Brigade Field Ambulance: Lieutenant-Colonel Francis H. Thompson resigns his commission, with permission to retain his rank and to wear the prescribed uniform (dated Feb. 24th, 1909).

1st West Lancashire Field Ambulance: The undermentioned officers are transferred from the 2nd West Lancashire Field Ambulance (dated Jan. 1st, 1909): Lieutenant Frederick William Kerr Tough to be Lieutenant; and Lieutenant Adam Pearson Hope Simpson to be Lieutenant.

2nd West Lancashire Field Ambulance: The undermentioned officers are transferred from the 1st West Lancashire Field Ambulance (dated Jan. 1st, 1909): Lieutenant William Macdonald to be Lieutenant; and Lieutenant Cecil Lennox Williamson to be Lieutenant.

1st Lowland Field Ambulance: The undermentioned officer to be Major (date April 1st, 1908): Captain George H. Edington and Captain Archibald Young.

2nd Northern General Hospital: Edmond Fauriel Trevelyan, to be Lieutenant-Colonel (dated Dec. 14th, 1908).

Major Charles Boyce to be Lieutenant-Colonel as from Oct. 28th, 1902 (dated April 1st, 1908).

Lieutenant George H. Lewis resigns his commission (dated Dec. 14th, 1908).

For attachment to units other than Medical Units.—Alexander Dick to be Lieutenant (dated Dec. 2nd, 1908). Lieutenant Alfred Harold Godwin, from the 2nd West Lancashire Field Ambulance, to be Lieutenant (dated Jan. 1st, 1909). Lieutenant Lawrence C. V. Hardwicke to be Captain (dated Jan. 22nd, 1909). Captain John Kyffin, from the 2nd Western General Hospital, to be Captain (dated June 25th, 1908). Lieutenant Charles A. Spooner to be Captain (dated Dec. 4th, 1908).

VOLUNTEER CORPS.

Royal Army Medical Corps (Volunteers).

Eastern Command, Woolwich Companies: Captain and Honorary Major (Honorary Captain in the Army) Mowbray Taylor resigns his commission, with permission to retain his rank and to wear the prescribed uniform (dated March 31st, 1908).

DEATHS IN THE SERVICES.

Major Walter Hood Orr, C.I.E., I.M.S., at Bahraich, Oudh, on Jan. 28th, aged 41 years. He entered the service in 1893, became Captain in 1896, and Major in 1905. He served in the Waziristan expedition and Sir Wm. Lockhart in 1894–95 with the 33rd Punjab Infantry (medal and clasp).

Correspondence.

"Audi alteram partem."

THE SECTION OF ANÆSTHETICS OF THE ROYAL SOCIETY OF MEDICINE AND THE PROPOSED GENERAL ANÆSTHETICS BILL.

To the Editor of THE LANCET.

SIR,—At the meeting held on Jan. 20th the section considered and accepted, after amendment, the clauses of the proposed Bill dealing with unqualified practice. The amendment moved and carried admitted the right of *all* dentists, being duly qualified and upon the Dental Register, to administer nitrous oxide gas. At the adjourned meeting of the section the remaining clauses, those dealing with the compulsory education of persons who by the enactments might administer anæsthetics, were placed before the section, and an amendment was proposed and passed to the effect that dental students should be compelled to show efficiency in knowledge of the uses of nitrous oxide gas. Subsequently to this the whole of the proposed Bill as amended by the members of the section at the meetings of Jan. 20th and Feb. 5th was placed before the meeting and was accepted and carried by 14 votes to 7.

The resolution proposed and passed after this was, I submit, one which could not be strictly in order at an adjourned meeting, as upon the face of it it appeared to rescind motions already carried at an earlier stage of the meeting. I am not concerned as to the confusion these contradictory resolutions have occasioned; they arose from causes exerted from outside the section and only indicate that some difference of opinion exists among specialists upon the matters at issue, and that it will probably be necessary to modify the wording of the proposed measure unless it courts serious and honest opposition. Mr. H. B. Gardner's letter in your current issue is not quite free from inaccuracy. The unqualified dental practitioner is at present open to prosecution and any medical man who administers an anæsthetic for him is regarded at the present time by the General Medical Council as being guilty of "disgraceful conduct in a professional respect." I fear the proposed Bill will not mend matters with regard to these persons. In contending that dentists will either administer "gas" and operate single-handed or will allow an "unqualified mechanic" or "servant" to administer the anæsthetic, Mr. Gardner seems to me to impugn without justification the *bona fides* of an honourable profession. It is besides a dangerous line of argument to advance, for there have been deaths (even under nitrous oxide gas) when a medical man has single-handed administered the gas and operated. At one time it was quite common for medical men to enlist the services of butlers to act as anæsthetists and recently it has been suggested that "orderlies" should so act in military practice. These facts support the

necessity for some such measure as the proposed Bill being placed upon the statute book, but they do not justify us, I submit, as medical men in expecting that there will be less sense of what is right and fitting in behaviour among dentists than that which we ourselves practise.

It has been contended that fatalities under nitrous oxide gas are "not inconsiderable." This is a surprising statement to me, as I was under the impression that such deaths were infinitesimally small in number during dental operations when compared with the millions of cases of anæsthesia produced by this agent. At the meeting of the section information was asked as to the actual number of deaths which have occurred in dental surgeries when dentists were administering the "gas," but no definite figures were produced. To justify the exclusion of dentists from the right of using nitrous oxide gas I take it we must prove (1) that deaths have been conspicuously more numerous in the hands of dentists than in the hands of medical men; (2) that such deaths were due to the want of knowledge and inability on the part of dentists to cope with the possible dangers incident to narcosis; and (3) that such fatalities were above the accepted ratio per cent. for the anæsthetic in question. The figures which Mr. Gardner at the instance of Dr. Hewitt now produces are 13 deaths under "general anæsthetics" in 20 years! Of the deaths quoted which appear to represent a mortality of 0·65 per annum, or if we exclude the two "unqualified dentists" 0·60 per annum, we have yet to learn whether any of these deaths were due to nitrous oxide gas, and if so, how many go to make up the formidable total.

We all desire to assist in lessening the dangers to the public by the use of any drugs as potent as general anæsthetics by incompetent persons. There must be degrees of competency, and education will raise the general level of both qualified medical men and qualified dentists, but I fear we shall only defeat our object if we fail to cultivate such cordial relations as should exist between the branches of those who practise the healing art, and attempt to compel dentists to forego an accepted part of their art, until we can convince them as a profession that their loss constitutes the public gain. At present I am afraid we have no convincing arguments in support of such a thesis. With regard to the Royal Dental Hospital of London, as senior anæsthetist I may say that the reasons which have heretofore influenced the authorities in not including anæsthetics in their compulsory curriculum have been solely the desire to avoid clashing with the arrangements for teaching at the general hospitals at which the dental students receive their medical and surgical training. Presumably the teachers at such schools instruct all students in the uses of general anæsthetics. As a matter of fact, for a good many years I have given informal instruction in the form of lectures and instruction at the time of administering anæsthetics to students of the Royal Dental Hospital. Such teaching has been, however, unscheduled and attendance by students has been voluntary.

I am, Sir, yours faithfully,

Mortimer-street, W., Feb. 22nd, 1909. DUDLEY W. BUXTON.

To the Editor of THE LANCET.

SIR,—The letters of Dr. J. Blumfeld, Mr. H. Bellamy Gardner, and Dr. W. J. MacCardie in your issue of Feb. 20th have cleared the air. When read in conjunction with your report of the proceedings of the Section of Anæsthetics on Feb. 5th they plainly indicate what occurred at that meeting. Owing to the influence and exertions of the little cabal which lay in wait for the proposed General Anæsthetics Bill when it first came before the section the members of that section were temporarily induced to support the principle of registered dentists administering nitrous oxide. Subsequently, however, when the issue became clearer and its breadth and importance more defined the preceding voting was reversed and the resolution in favour of legislation restricting the administration of *all* general anæsthetics to medical practitioners was passed by a large majority and forwarded to the Council of the Royal Society of Medicine. Whilst it is satisfactory to chronicle this step in the direction of reforms, it is unsatisfactory to observe in many quarters a misconception as to the precise objects of the proposed legislation. May I therefore again ask for space to put the present state of things clearly before the profession?

In the first place it should be understood that the proposed Bill is intended to be the foundation-stone upon which it is hoped to construct reforms which will, when introduced, render deaths under general anæsthetics far less frequent than they are at present. It is not intended and it has never been intended to be a measure which will, *per se*, have any *immediate* effect in lessening the frequency of anæsthetic fatalities. It is not likely that it will appeal to those who, like Dr. Silk, spend their lives in little valleys of specialism and never walk up to the hilltops to view the great horizon beyond. If he and any followers he may possess would make this excursion, taking with them as their guide-book the report of the Unqualified Practice Prevention Committee of the General Medical Council, they would return wiser and better men. Should the Bill become law it will merely do what most rational persons think should have been done long ago—it will provide that everyone who takes upon himself the responsibility of administering a drug with the object of rendering another person unconscious whilst some medical or surgical procedure is undertaken shall have received that fundamental medical training without which it is contended he is not justified in the interests of the public in disorganising, even temporarily, those mechanisms and functions upon which life depends. Without this fundamental training all technical instruction—nay, even experience that may have been acquired—can only be of an empiric type. No one is more alive than I am to the necessity of improving the administrative and teaching *personnel* of our hospitals and schools in this department of practice and of greatly extending the instruction in anæsthetics, so that every student before qualification shall have become a proficient and safe anæsthetist. To construct such reforms, however, without the legislative basis indicated would be to construct a beautiful and useful building without secure foundations. Is human life of such little account that we are to permit suffocative gases and toxic vapours to be administered to those of our fellow beings who from ignorance, poverty, or other disabilities are unable to provide for the security of themselves and their children? Is the herbalist to be allowed, as he is at present—and I am now referring to an actual and fatal case—to administer chloroform to a healthy servant girl of 15 who has just had dinner and whose corsets have not been loosened whilst he, single-handed, attempts to extract a tooth? Is such a case as the following, which was recorded only last year, to be passed over in silence? A maker of artificial teeth, who was not registered, administered ethyl chloride to a healthy young woman of 28. He stated in his evidence at the inquest: (1) that five c.c. was the ordinary dose; (2) that he was unaware what "5 c.c." meant; (3) that in administering the ethyl chloride he was not guided by the patient's condition but that he looked at the bottle; (4) that he was unaware any deaths had taken place under ethyl chloride; (5) that he did not know how to perform artificial respiration; and (6) that he judged of the fitness of patients for ethyl chloride not by putting any "sounding trumpet to their breasts" but by asking them if they had had any heart trouble and how they felt. I do not contend that we have at our disposal records of any *large number* of accidents in the hands of non-medically qualified persons. This circumstance, however, must not be used as an argument against the proposed legislation, for it has been pointed out by a well-known coroner that anæsthetic fatalities in private practice—and the accidents now under consideration belong to that category—somehow or other do not readily find their way into public statistics. But the 13 fatalities which I find recorded in the dental journals (1888-1908 inclusive) as having occurred in England and Wales in the hands of non-medically qualified dentists constitute a very important, if not a large series, for it is highly probable from the evidence available that in the great majority of them death would not have occurred had a medical practitioner been present. The fact that in nearly all of these cases medical help was sent for is not without its significance. Again, as Mr. Bellamy Gardner mentions in his letter, in 11 out of the 13 cases *the operator was also the anæsthetist*. I would submit that had those critics who now comment on the scantiness of the available evidence been unfortunate enough to lose a wife or a child under the above circumstances their attitude to the present regrettable state of things would probably be wholly different.

In the next place may I explain the present position of

affairs as regards the dental profession? One of the misconceptions that prevail is that the Bill, if passed, would interfere with those registered dental practitioners who now administer general anæsthetics. This would not be equitable and it is not the fact. The proposal is that all dentists on the Register at the passing of the Act would be permitted to continue administering general anæsthetics as at present, but that future dental practitioners desiring to give general anæsthetics would have to obtain some medical qualification to entitle them to do so. Another misconception is that the proposed legislation would be detrimental to the dental profession as a whole. Surely the opinion expressed by Mr. C. S. Tomes, that the proposed legislation would deal a blow at quackery and semi-quackery, is sufficient to correct this misunderstanding. Mr. Tomes, like the promoters and supporters of the proposed Bill, believes it would be in the interests of the dental profession for *all* general anæsthetics, including nitrous oxide, to be administered by medical practitioners. I may here state that I number amongst my friends a large number of dentists and I am glad to say that practically all of them agree with Mr. Tomes's views.

I believe that there are roughly 32,000 registered medical practitioners resident in the United Kingdom and only about 5000 registered dentists—that is to say, there are six registered medical practitioners to every registered dentist. When the other reforms which will quickly follow upon legislation have been effected, when medical students before qualifying have been thoroughly trained in "gas"-giving, as I venture to think they should be at our dental hospitals, what difficulty will there be in obtaining their services? It is true that their remuneration may be small but this is so in other branches of practice. Moreover, the very fact that we have only 5000 registered dentists in our country indicates that the time that dentists now spend in administering anæsthetics might with financial and many other more important advantages be transferred to the essentially technical part of their profession. In busy provincial towns where fees are very small a dentist might easily arrange two or three occasions in the week when a neighbouring medical man would attend for "gas cases" to the advantage of everyone concerned. In cases of urgent toothache such a medical man in constant practice with his colleague would, I feel sure, attend with equal willingness. Then we have our dental hospitals and dental departments to general hospitals and dispensaries for the very poor classes. As to village dental anæsthetic practice, this is at present largely in the hands of medical men themselves, except when, as is the case in some districts, a visiting dentist attends on certain days. Under these circumstances the medical man would, as at present, act as anæsthetist.

I could say a great deal about the way in which certain critics have done all, and are still doing all, in their power to arrest the progress of the proposed General Anæsthetics Bill which they know perfectly well is urgently called for but which they cannot bring themselves to support owing to the unfortunate circumstance that the Bill in question has had the bad taste to choose other people for its parents. Even if you, Sir, could grant me space and I could spare the time to reply to letters of critics of this class I doubt whether any good purpose would be served. Their arguments, if they deserve the name, must be left to the cool judgment of posterity. Similarly I could say something to those who have given a half-hearted support to the proposed legislation—running with the hare when the condition seemed favourable and hunting with the hounds when that seemed to possess greater attractions. These critics are more difficult to deal with than the former class owing to the fact that their hare-and-hound tactics necessarily prevent them from running straight. I do not think, however, that the movement which has now fortunately started will be seriously checked by critics of either class. In conclusion, may I again emphasise my contention that in order to bring this branch of practice up to its proper level we must look to our legislature to prohibit unqualified practice in anæsthetics; to our scientific and medical bodies to enunciate the principles and methods of safe anæsthetisation; to the General Medical Council to require that all medical students, before qualification, shall have received ample instruction in this subject; and to our hospitals and schools to supply the public with thoroughly capable practitioners.

I am, Sir, yours faithfully,

Queen Anne-street, W., Feb. 22nd, 1909. FREDERIC HEWITT.

THE CLINICAL VALUE OF HÆMOMANOMETER OBSERVATIONS.

To the Editor of THE LANCET.

SIR,—I shall be glad if I can remove the difficulty expressed by Mr. S. G. Longworth in your issue of Feb. 20th in following my contention regarding the limitation of hæmomanometer readings. He will, I hope, pardon me if I deal but shortly with the points he raises. The fuller discussion of them will be found in my book on "Arterial Hypertonus" and in a paper read at the annual meeting of the British Medical Association last year and published in the Journal of the Association. The first suggestion I would offer is that when blood pressure is referred to it is necessary to state whether what is meant is the measure of the force required to obliterate the brachial artery, or the estimate that is formed of the blood pressure in the aorta. I have not known it to be suggested before that a contracted periphery helped the heart by diminishing its work. If contraction of a vessel lowers the pressure inside it, how is it that a vessel in such a state gives a higher manometer reading? I know no answer save "the vessel wall." Mr. Longworth offers an explanation other than mine of how a patient on the verge of death from heart failure should have a brachial manometer reading of 95 mm. Hg. He suggests that 95 may really have been the pressure—that is to say, that the pressure in the aorta was 95 mm. Hg, and yet this patient's heart was as feeble as such a heart can be. To prevent death, with an aortic pressure of 95 it would be necessary to have an intraventricular pressure during ventricular systole of at least a little more, and a ventricle that can develop such a pressure during systole is not a weak ventricle, and is not the type of ventricle that leads to heart failure. The faith in hæmomanometer readings as representing blood pressure seems to me to have relegated to the realm of myth the occurrence of such a condition as ventricular failure. I make bold to assert that in such a case as I referred to the aortic pressure was probably not 20 mm. Hg, and that the heart finally stopped when the intraventricular pressure fell to or below the aortic pressure.

With regard to sclerosed radials and normal readings, I have noted two facts—the one is that sclerosed radials do not always mean sclerosed brachials, and the other is that some thickened radials are so dilated and their walls so altered that the finger recognises them as easily compressed. With such vessels hæmomanometer readings may be normal.

In conclusion, Mr. Longworth refers to my suggestion that some cases of asthma might be due to constriction of pulmonary vessels and objects to the validity of my inference from the accompanying constriction of the systemic arteries. I understand that the pulmonary vessels are not under the control of the ordinary vaso-moter nerve mechanism, but that does not negative the clinical fact that the nitrites may relieve an asthmatic paroxysm as well as a hypertonic paroxysm. The pulmonary blood pressure may, no doubt, be influenced in health by the variations in the systemic circulation; but in clinical conditions it is determined by the condition of the right ventricle, for the pressure in the pulmonary artery can only be in proportion to the strength of that ventricle. Nearly all clinical problems concerning the circulation have at their core the demand for a true estimate of the driving power of one or other ventricle and the hæmomanometer does not register it.

I am, Sir, yours faithfully,

Edinburgh, Feb. 20th, 1909. WILLIAM RUSSELL.

THE TREATMENT OF SYPHILIS.

To the Editor of THE LANCET.

SIR,—In your issue of Feb. 13th, p. 499, it is acknowledged that owing to the system of calculating an error of 150 per cent. occurs in estimating the dose of mercury in a 40 per cent. grey oil. This error occurred in the writing of such an experienced syphilologist as Dr. Stopford Taylor notwithstanding the accurate calculation of Dr. Oram. In addition a further error of about 7 per cent. results from variations in the specific gravity of the liquid paraffin used in the manufacture of the grey oil. Besides this 40 per cent. grey oil requires a specially graduated syringe. Now, a syringe which is capable of introducing an error of 150 per cent. in each dose scarcely commends itself for common use.

With a grey oil prepared in accordance with the instructions contained in the new French Codex there is no necessity for a specially graduated syringe, as a simple calculation enables us at once to ascertain accurately the exact dose of mercury contained either in a definite number of cubic centimetres or of minims. The objections to a 40 per cent. grey oil have long been known and means have been devised to obviate these sources of error—namely, the plan adopted by English pharmacists of weighing solids and measuring liquids. A mercurial cream thus prepared was introduced by Dr. Althaus in his paper read before the Berlin Medical Congress in 1890. Such a cream contains mercury, 1; anhydrous lanolin, 4; liquid paraffin to produce 10. Mercury and lanolin by weight, the liquid paraffin by measure. Ten minims contain one grain of mercury. When the errors liable to occur in calculating the dose of mercury and its salts are recognised and it becomes customary to record not only the amount of mercury injected but also the amount of the injection, then there is every reason to believe that injections will be as popular in England for the treatment of syphilis as they are on the continent to the great benefit of patients.

I am, Sir, yours faithfully,

Stratford-place, W., Feb. 16th, 1909. T. P. BEDDOES.

FRIENDLY SOCIETIES AND THE MEDICAL PROFESSION.

To the Editor of THE LANCET.

SIR,—Everyone interested in the promotion of thrift among the working classes on the one hand, and the welfare and indeed the honour of the medical profession on the other, must have looked forward with the greatest of interest to the conference of medical men and friendly societies convened by the Council of the Charity Organisation Society on the 6th current. But, alas! as far as practical results are likely to follow from the joint meeting, I fear we must all be grievously disappointed. While many nice compliments were paid on both sides the word "compromise" was never spoken.

The fatal barrier of a wage limit still stands across the path of peace. Can no one suggest some strategic means of getting round this fatal obstruction to a good understanding between the two parties meantime ranged in hostile opposition to each other? Having spent some years ago much time and thought in considering this question of the battle of the clubs and how to end it, and having been, indeed, the author of the suggestion of a conciliation board or boards, which met an ignominious fate, I venture greatly daring to make still another proposal. But before proceeding further may I be allowed to say that I deplore the shortness of the public memory in so far that not one word was said by way of recalling the extraordinary amount of time and trouble so ungrudgingly bestowed over this matter by that most unselfish of men, our good friend the late lamented James Grey Glover.

As matters are at present managed the club doctor is placed in the position of an insurance agent, with the further risk of unlimited liability. The friendly societies from long experience are in a position to gauge the *average* amount of this risk. They themselves with the command of so much money behind them ought to be the insurers. They know to a fraction what sickness amongst their members costs them, and they can very fairly estimate the average amount of medical attendance required from the club doctor. Let them guarantee the payment of this sum to the medical attendant of the sick man and, for many and good reasons, allow the patient to choose his own physician from a list approved of by the managers of his club. I have said a list approved of by the club and its managers for this reason. First, no medical man need remain a day longer on the club's list than he chooses and so he would be independent, and without the feeling of independence no one can do his duty to his patients and the club as it ought to be done; and secondly, because in all fairness the club and its directors should be able to make sure that as far as the club's interests were concerned no malingering should for a moment be allowed by any laxness on the part of the club doctor.

Speaking for the moment as a senior to his juniors, I recognise two aspects of club practice. However ill paid such work as a rule is, it gives the struggling young practitioner an opening in the way of experience not only in his profession proper but in the opportunity of studying, and let me add of setting a proper value on human nature among the poorer members of the community; while, if he be gifted with the right brotherly spirit, having been the means of his advancement, he should not grudge passing the work on as he grows older to younger and more strenuous hands.

I am, Sir, yours faithfully,

WILLIAM BRUCE.
For 20 years a member of the General Medical Council.

Feb. 17th, 1909.

THE PHYSIOLOGY AND PATHOLOGY OF WORK IN COMPRESSED AIR.

To the Editor of THE LANCET.

SIR,—I have never yet replied to any letter in the press or medical journals. Feeling neither irritated nor annoyed by the literary effusion of Dr. Leonard Hill in THE LANCET of Feb. 20th, I prefer that the letter should remain as it is—his monument. Extravagant speech seldom reaches the object aimed at, while personal abuse falls, only to be reflected, upon the source from which it came. As regards the experiment referred to in the letter of last week the following, which bears upon the subject, is a quotation from p. 235 of "Recent Advances in Physiology," a book edited by Leonard Hill: "The neglect of a simple physical law is the less excusable seeing that Pouiseuille in 1835 observed the capillary circulation in frogs inclosed in a strong glass chamber and submitted to 3–5 atm. pressure." This experiment was performed before Dr. Leonard Hill was born. There is therefore nothing to support the unfounded and confounded claim of Dr. Leonard Hill to priority so far as this particular experiment is concerned. One other point, that of pithing (or pricking) frogs alluded to in the letter. To pith etymologically is "to sever the spinal cord." This can be done below, above, or through the medulla. I am sorry that Dr. Hill has never seen the circulation continue in a frog's web after pithing. This any physiologist can teach him. In the present instance in man the operation of unintentional pricking of the nervous system above the medulla seems to have been followed by a regrettable loss of physiological control of the higher cerebral centres. Into a controversy as stupid as it is unnecessary, and out of which so far nothing but amusement to myself and your readers has come, I decline further to be drawn.

I am, Sir, yours faithfully,

Newcastle-upon-Tyne, Feb. 22nd, 1909. THOMAS OLIVER.

THE ETIOLOGY OF BERI-BERI.

To the Editor of THE LANCET.

SIR,—I have read with much interest the communication of Dr. H. Fraser and Dr. A. T. Stanton on the Etiology of Beri-beri and shall be glad if you can find space for the following remarks. This subject has been repeatedly brought to our notice of late, and opposite views have been advocated. No one, so far as I know, has referred to the experience of the Japanese in their war with Russia. This is very fully stated by Dr. Louis L. Seaman in his book entitled "The Real Triumph of Japan," in which he gives us the medical history of the war and devotes a chapter to the subject of beri-beri. He tells us how Dr. Takaki, conceiving the idea that this disease was due to the character of the food supplied to the forces, in 1883 induced his Government to send out two ships of war on a voyage of nine months to New Zealand and South America. "There developed on the first voyage (of 271 days) 100 cases of the disease out of less than 350 persons on board." When the *Ryujo* (the first ship) reached Honolulu on her return she had 125 cases of beri-beri on board. "When the *Taukuba* (the second ship) reached there she had *three* cases." "The total number of cases that developed on the *Taukuba* were 16, as compared with 160 cases on the *Ryujo* the year before. It resulted from this experience that, in the words of Dr. Seaman, "during the war with Russia the navy was entirely free from" this disease. How was this result obtained? Solely by altering the diet in the way of diminishing the proportion of rice and substituting barley and other ingredients.

In 1890 Director-General Takaki reported personally to

His Majesty the Emperor "the great success in eliminating beri-beri from the navy which ensued from the change in the ration, and that hereafter there would be no reason why Japan should longer dread the ravages of this silent foe." "In view of that unquestioned success in eradicating this disease from the navy, the reluctance of the army authorities to adopt a ration that had been tried with so much success was all the more surprising. In February last (1904), however, the number of cases in the army had become so alarming that General Terauchi, the Minister of War, ordered a change in the army ration, by which a mixture of rice and barley, seven parts of rice to three of barley, was issued to the troops instead of pure rice." "An immediate change for the better took place." "So sure is Baron Takaki that his theory is right that he does not hesitate to say that he could produce beri-beri by diet alone and that he could cure a case and prevent a relapse by diet alone." "Almost one-half of the sickness in her army was from that disease. The estimate of the number of cases ..... shows that they amounted to the enormous total of 84,545." It therefore comes to this, that beri-beri is a food disease.

With all these facts before him even Dr. Seaman goes out of his way to find a specific cause in the form of an organism which "is introduced into the body, probably by the mouth, and its propagation generates a toxin which causes degenerative changes in the peripheral nerves." This is the microbic theory "run mad." Yet he says: "That it has a direct relation to food is admitted by all authorities and as it only occurs among those races which make rice their chief staple the question among experts is whether the rice alone or some fungus or toxin of rice is the exciting cause."

The observations of Dr. Fraser and Dr. Stanton go to negative the latter idea and furnish "evidence that the disease is not a directly communicable one" but is due to a deficiency in some of the elements which are necessary for proper nutrition. Nor should I omit to draw attention to the great contrast between the Russian and Japanese forces in the matter of disease. While the former were decimated by typhoid fever among the latter this disease was almost a negligible quantity. Thus, in Kuroki's army, in the period comprising the months from March to August, the cases of typhoid fever only amounted to 27, as against 1248 of beri-beri. Lest I should encroach too much on your space I will only add that I believe it will yet be shown that typhoid fever is also a food disease.

I am, Sir, yours faithfully,

Pinner, Feb. 16th, 1909. GEORGE GRANVILLE BANTOCK.

*** We are glad to recall these facts to our readers by publishing Dr. Granville Bantock's letter. We published three lectures by Baron Takaki on the Preservation of Health amongst the *Personnel* of the Japanese Navy and Army in THE LANCET of May 19th, May 26th, and June 2nd, 1906. These contained the facts mentioned by our correspondent, and in the issue for June 16th we reviewed Surgeon-Major Seaman's work in a leading article on Japanese Medicine.—ED. L.

PURULENT CONJUNCTIVITIS OF INFANCY.

To the Editor of THE LANCET.

SIR,—Mr. Sydney Stephenson again suggests that the term "ophthalmia neonatorum" should be retained because it is "time honoured." This argument is too hoary to admit of further serious discussion. He next claims that there is nothing to choose between the "time-honoured term" and "purulent conjunctivitis of infancy," because both terms are inexact. But as between the accuracy of each, the weight of numbers is largely in favour of the latter, and in this regard Mr. Stephenson himself may be quoted. He has written: "About two-thirds of all cases of ophthalmia [conjunctivitis] in newly-born babies brought to hospital are associated with, and due to, the micrococcus of gonorrhœa. The importance of this generalisation lies in the fact ..... that in ophthalmia [conjunctivitis] the cornea suffers comparatively seldom unless gonococci be the cause of the conjunctival inflammation." That is to say, except for the purulent conjunctivitis in infancy caused by the gonococcus there would be no necessity for any inquiry into the subject. Therefore, seeing that the sole aim and purpose of the sub-committee of the British Medical Association is to consider that form of purulent conjunctivitis in infancy which is due to the gonococcus, it is impossible to understand the reason of the retention of the misleading "time honoured" ignorant term "ophthalmia neonatorum," which in no way indicates the specific disease into which the committee has been appointed to inquire. If the term purulent conjunctivitis as such is objected to, then it is impossible to deny the accuracy of the description "gonococcal conjunctivitis of infancy."

I am, Sir, yours faithfully,

London, W., Feb. 15th, 1909. PERCY DUNN.

CONGENITAL DISLOCATION OF THE HIP-JOINT.

To the Editor of THE LANCET.

SIR,—I read in the report of the last meeting of the Medical Society of London on p. 466 of your issue of Feb. 13th that one case of the above-named deformity in which the surgeon had unsuccessfully attempted Lorenz's manipulative method of reduction was made the basis of a statement that this method is of little value. Sometimes when important professional topics are to be brought before a medical society those who have most practical experience of the matter are invited to express their opinions. I think this course is a good one, because in this way alone can timely correction of the errors of inexperience be obtained.

I hope at an early date to collect together as many as can be traced of the patients on whom I operated in 1905–06 and to arrange to show them before the Royal Society of Medicine, previous to publishing a full statement of the results I have obtained in some 50 cases. At present I will only repeat what I stated in my article in THE LANCET of March 9th, 1907, p. 650, that when the operation is done by one experienced in the method at a suitable age it is not followed by any severe pain or other serious effect and that in about 80 per cent. of the cases a permanent cure—i.e., a true anatomical reduction as shown clinically and by x rays, with a perfect physiological function, is obtained.

I am, Sir, yours faithfully,

Portland-place, W., Feb. 16th, 1909. J. JACKSON CLARKE.

THE OBJECTS OF EXAMINATIONS.

To the Editor of THE LANCET.

SIR,—Letters appearing in THE LANCET of Jan. 5th and 12th on "The Objects of Examinations" are particularly interesting to unfortunates like myself who were never lucky at these ordeals. I wonder whether my experiences are unique? I believe I was of average intelligence at school and left obtaining an "exhibition" or "scholarship" at a medical school, intending to work hard and hoping in time to obtain the F.R.C.S. Eng. and an M.B. of a British university. I passed the second "Conjoint" and the intermediate M.B. in the shortest time allowed by the regulations and was "ploughed" for both finals in due course. In the subject, surgery, in which I failed I happened to be examined by the same gentlemen in both examinations. I presented myself again for both and met the same gentlemen with the same result.

Three months after the second defeat I obtained the only qualification I possess. After a few years' practice at home I again presented myself for the College examination and, curiously enough, met one of the same examiners who referred me for three months. I could not complain at any examination, either at papers or at questions asked by *viva voce* examiners, and I honestly believe that the examination I passed was the most searching of any I tried. My one complaint was one of manner. The searching gaze, the forbidding manner of the questioner, and the almost insolent reception of my answers caused in me such a helpless state of hopeless nervousness that after a few minutes of the rack my answers must have been as wide of the mark as Auntie Martha's to Joseph Vance.

My last experience was too painful. I was in practice; my medical friends knew I had tried and failed. I sold out and "got" to the "colonies" and have never since grumbled at my lot. I have a practice considerably over the £1000 per annum which is regarded as "decent." I hold moderately high rank in a "colonial" A.M.C., am an M.O.H., a J.P.,

and medical officer to two hospitals as large as many non-teaching hospitals at home, so though by no means brilliant may claim, I think, average intelligence. But because of lack of surgical knowledge or an equable nervous system, or *horresco referens*—after reading your leader on the objects of examinations—lack of an examiner who could examine, I still am only an L.S.A.

PS.—And am rather proud of it.

BIRMINGHAM.

(FROM OUR OWN CORRESPONDENT.)

The University.

AT the recent annual meeting of the court of governors, the Vice-Chancellor (Alderman Beale), in moving the adoption of the report, drew the attention of the governors to the fact that a pension fund had been established for the members of the staff of the University. He admitted that the usual obligation to do something for those who had given the best of their lives to the service of an educational establishment was obvious, and he stated that by utilising the earmarked portion of the Government grant the council had seen its way to adopt a definite scheme which would, at first, entail some increased expense but which would eventually become self-supporting. He gave no details of the scheme but it is understood to be a contributory scheme, those who are to benefit devoting a certain percentage of their income to the fund whilst the council contributes the necessary additional amount from the Government grant and from its other resources. Having dismissed this subject the Vice-Chancellor passed on to the opening of the new buildings at Bournbrook, which is to take place in July, but he was unable at the moment to give any information as to the date or other details. In dealing with the financial part of the report he referred to the deficiency in the annual accounts of £4924. This deficiency is quite apart from capital expenditure and is due largely to interest on borrowed money and to the expense entailed in establishing Queen's College as a hall of residence; eliminating those two items, then, it was found that the income had increased by £1741 and the expenditure by a little under £200. He did not expect that the two items which had disturbed the accounts in such an unsatisfactory manner would recur, but, on the other hand, he desired his audience to recognise that the expenditure at Bournbrook would be greatly increased when the departments of chemistry and physics were opened. Turning next to the appeal for money which has just been launched, he was able to report that during the short time which it had been before the members of the court of governors an additional £10,000 had been received and the total at the date of the meeting was £67,000. The increase had come, however, from a comparatively limited number of subscribers, and he expressed the hope that people would not hang back because the amounts already contributed were chiefly large amounts, for small as well as large amounts were required. He was sure that if they had coöperation and the public could be roused anything could be done, and he appealed to the present generation to do for their successors what their predecessors had done for them.

The Birmingham and Midland Eye Hospital.

Last year the committee of the Birmingham and Midland Eye Hospital secured the adjoining premises which had previously belonged to the Girls' Friendly Society. It has been decided that that building shall be devoted to the use of the nurses and servants and their removal from the hospital building will give accommodation for 16 additional beds. The enlargement will necessarily increase the expenses of the hospital, and the committee hopes that the public will, therefore, give it increased support. It has also been decided that some of the additional accommodation shall be utilised for paying patients; by this means some of the increased expense may be recouped and at the same time help will be given to comparatively poor people. To prevent any abuse of the system a small committee will satisfy itself as to the suitability of the patients admitted to the paying wards from a general point of view, the medical officers deciding as to their fitness.

A Case of Rupture of the Heart.

At an inquest held on a case of sudden death which occurred recently in Aston, Dr. G. P. Adamson, who made the post-mortem examination, stated that the right auricle of the heart had burst to such an extent that he could put three fingers through the rupture. The subject was a youth, aged 19 years, who was 6 feet 2 inches high. All his internal organs were healthy except the heart, which was generally affected with fibrous degeneration. In the evening of his death he complained of pain in the throat and chest and he vomited. He consulted a medical man and afterwards walked, with assistance, to his lodgings. There he was given an emetic and directly afterwards he became worse and died very suddenly.

Increase of Lunacy at Aston.

At a recent meeting of the Aston board of guardians it was shown that the number of lunatics maintained in asylums by the board was that week 68 more than in the corresponding week of the previous year, and the suggestion was made that the medical officers should consider the advisability of remanding some of the cases to the workhouse for a few weeks so that they could be under observation. The chairman pointed out that the guardians were only administrators and had nothing to do with deciding who should be sent to lunatic asylums. He stated, further, that the increase of the number of lunatics during the past year meant an addition of £1800 to the expenses of the union and he noted that some years ago they were paying £10,000 annually for lunatics, whilst now they had to pay almost £20,000 a year.

The Children's Hospital.

The annual report of the Children's Hospital, presented at the meeting held on Monday last, is a record of increased work done at a reduced cost and resulting in a financial deficit of £294, which brings the total adverse balance to £1233. This deficit, though a small matter in itself, is ominous as regards the increased support which will be necessary when a larger hospital is erected, and it is to the projected new hospital that the committee particularly wishes to direct public attention at the present moment. Not only is the lease of the present building rapidly nearing its termination but the building itself is so badly adapted for its purpose that the chairman (Mr. A. F. Bird) did not hesitate to state that if an outbreak of infectious disease occurred and the new hospital was not available the in-patient department might have to be closed. The estimated cost of the new hospital is £90,000, towards which £19,904 have been given or promised and to which may be added a balance of uninvested legacies amounting to £3644. After the committee has paid for the site of the new hospital from the combined amount it will only have £6500 in hand for rebuilding purposes. The committee is of the opinion that such a relatively small sum does not justify it in commencing building operations and the scheme must remain in abeyance until the public subscribes about £30,000. This is not a very large amount to ask for, and in spite of the bad times and various other appeals it ought easily to be obtained for so excellent a purpose.

Feb. 23rd.

MANCHESTER.

(FROM OUR OWN CORRESPONDENT.)

Fire at a Lodging-house.

THE recent fire at a lodging-house in Manchester, where nine people lost their lives, may perhaps serve to call attention to the very anomalous conditions under which these institutions, if they may be so called, are allowed to be carried on. This lodging-house was made up of three adjoining houses, in a street which has fallen considerably in popular esteem. That they had been houses of some importance is shown by their being registered for 339 lodgers, but there were only 308 beds, and on the morning of the fire 225 men slept there. At the inquest, held on Feb. 18th, the proprietor said he opened them as a lodging-house in 1905, that they required no alterations except a wooden partition or two, "or something of that sort." There were three front doors, a strong latch on one, four bolts and a chain on another, and the door in the centre on the chain only. At the back there were three doors, and each house had one staircase. The precautions against fire were that buckets hung in the passages, exit notices were posted up and down,

and there was a notice prohibiting smoking in bed. There were no hose-pipes or any chemical extinguishers, nor had any of the staff had any instruction in fire drill, nor was there any outside staircase, and there were no special exits in case of fire. Two years ago some suggestions made by a corporation inspector were carried out, with the exception of an outside iron staircase. The witness said "he knew the authorities had no power to compel him to do this, and that it was optional with him whether he carried out their suggestion as to means of escape." He said he had considered the staircases and other matters, and did not think there was any danger, but was prepared to carry out suggestions, "and was merely waiting for the committee (of the corporation) to ask me to appear before them." It seems, therefore, that 200 or 300 people may be crowded together—there were presumably 75 people in each of the houses even if there was no excess of furniture—without necessarily any provision being made for escape from fire. The municipal authorities have no power to compel, nor, from an answer given in the House of Commons, has the President of the Local Government Board power to do anything, for Mr. Burns said that he was not empowered to issue regulations of the kind suggested, but he had no doubt that the city council of Manchester "would do all in their power to minimise the risk of such catastrophes as that which recently occurred." This answer was no doubt a reluctant acknowledgment of impotence, and it is surely time that the hands of the authorities should be strengthened. The coroner thought it was fortunate that of the 225 lodgers only nine had lost their lives, and asked, "What would you or I have done freshly awakened from sleep in a rabbit warren like that, the place a mass of asphyxiating smoke, not knowing which way to turn or where to go?" The jury, in returning a verdict of "Accidental Death," added that they had no evidence to show how the fire originated and said, "We think it is a public scandal that the city authorities have no power to compel lodging-house keepers to provide all possible preventive appliances and proper means of escape in case of panic or fire." The coroner said "he intended to send the strong expression of opinion of the jury to the Home Secretary." The sooner the present helplessness of the authorities ceases the better for the safety of the sojourners in these rabbit warrens.

Herbalists' Nostrums.

An inquest was held recently by the Manchester City coroner with regard to the death of a young man, named Humby, aged 22 years, who had suffered from diabetes. He had been treated satisfactorily in Nottingham, but on his return to Manchester began to take "Dill's Diabetic Preparation," a mixture made up and sold by John Mooney, a herbalist. Dr. E. Vipont Brown said that with proper treatment Humby's life might have been prolonged, perhaps for years. Mooney said he was not a qualified doctor, but that his mixture would cure diabetes unless the patient was actually dying when he first took it. "He had cured hundreds of cases." The jury found "that Humby's life was shortened by taking Dill's mixture and discontinuing diet as ordered by his medical man at Nottingham." The coroner described the verdict as "a special one," for, fortunately for Mooney, the jury had not connected him with the shortening of Humby's life; but should a similar case arise it would be open to the jury to find a different verdict. What he was doing might at any time bring him within the reach of the criminal law.

The Growth and Needs of Hospitals.

The growth and extension of hospitals seem never to cease. Whether it is only keeping pace with the increase of population or goes beyond this in obedience to the demand of the many who want something for nothing, is a question which has already become serious. The Salford Hospital has for some time contemplated a much-needed extension, and it was announced by the chairman of the board at the last meeting that the land required for the extension was bought and paid for. When, if ever, the limit will be reached no one knows, but on every hand new wants or new claims arise and the process goes on like Tennyson's brook. The chairman of the Manchester Royal Infirmary appealed some time ago for £100,000 to complete and to equip the new buildings. The appeal was largely responded to but he has had to ask again that the £8000 still wanting shall be given in time to tell the King and Queen, when they graciously come for the public opening of the infirmary, that the buildings are all paid for. No doubt the sum required will be found, and it will be a proud day when this really great hospital is fairly started for its mission of mercy and of medical education and progress.

Anthrax in Cheshire.

Cases of anthrax occur in different parts of Cheshire too frequently not to cause some anxiety. The other week a milking cow was certified at Wharton, near Winsford. The body of the animal was cremated and the sanitary authorities took steps to prevent the spread of the disease. In spite of this, however, fresh cases occur.

Life Saving Society.

Manchester has a branch of the Royal Life Saving Society, and its annual meeting was held on Feb. 22nd. Swimming and the best methods to adopt in attempts to save from drowning are among the praiseworthy objects of the society. It is a curious fact that more interest is often shown in inland towns than at seaside places or seaports in teaching children to swim and educating them when a little older in the art of giving help to those in danger of drowning. Everyone knows how comparatively rare it is to find a sea fisherman or a sailor who can swim. Some say there is a fatalistic notion among them that if they are to drown being able to swim will not save them but will only prolong the agony of a useless struggle for life. This plea for ignorance of a useful and beautiful art does not obtain in Manchester. The swimming-baths in different parts of the city afford good opportunities for instruction and practice and are used very largely. This is evident from the large number of awards (1153) made during the year for illustrating the various methods of life-saving. The chairman said that he looked forward to the time when every child physically fit of ten years of age and upwards would have to learn to swim. Perhaps one of the useless or merely decorative items in the present-day school curriculum might be dropped to make room for it.

Hospital Saturday Fund.

Colonel W. W. Clapham some little time ago presented the sum of £5000 to the Manchester and Salford Hospital Saturday and Convalescent Homes Fund, Incorporated, which sum has already been distributed to the various hospitals. In addition to this the sum of £4200 has been available from the collections in 1908. The committee thinks this amount gratifying in a year marked by serious trade depression, with its consequent increase of unemployment, and by many other appeals to the public during the year.

Feb. 23rd.

WALES AND WESTERN COUNTIES NOTES.

(FROM OUR OWN CORRESPONDENTS.)

Fees for Medical Men in Cases under the Midwives Act.

AT a meeting of the Bridgwater board of guardians held on Feb. 17th a letter was read from the Local Government Board in reference to the remuneration of medical men in regard to midwifery cases in which assistance might be called for by a certified midwife. The Board stated that if medical assistance was requisitioned by a midwife in the case of a patient in poor circumstances the guardians might pay for the services so rendered under the Poor Law Amendment Act, 1848, or in the case of a district medical officer under Art. 182 of the General Consolidated Order. The guardians at a previous meeting had offered the medical men 10*s.* for each case but the medical officers considered this inadequate. After a considerable discussion the guardians eventually determined that, instead of adopting a scale of fees, they would treat each case on its merits, according to the circumstances.

Antivaccination in the West of England.

The increase in the number of conscientious exemption certificates from vaccination during 1908 as compared with 1907 has been very great in the West of England. The vaccination officer of the St. Thomas (Exeter) board of guardians states that he received 168 "exemptions" in 1908, compared with 25 in 1907. The vaccination officer of the Chipping Sodbury (Gloucestershire) board of guardians

reports that for the first six months of 1908 he received 62 exemption certificates, as against 19 in the corresponding period of the previous year, and in other districts equally striking figures could be quoted.

The Exeter Dispensary.

The annual meeting of the subscribers to the Exeter Dispensary was held on Feb. 17th. The medical report stated that 4805 patients had been treated during 1908, compared with 4803 in 1907. The financial statement showed that the income amounted to £1564 and that a favourable balance of £41 remained at the close of the year. It was decided not to fill the vacancy on the medical staff caused by the resignation of Mr. L. R. Tosswill (who has been appointed a medical inspector of schools), as it was considered advisable to reduce the number of medical officers to ten, the committee considering that number to be quite sufficient for the requirements of the institution.

The Royal Devon and Exeter Hospital, Exeter.

The annual meeting of the governors of the Royal Devon and Exeter Hospital was held on Feb. 18th. The medical report stated that during 1908 the in-patients numbered 1509, against 1411 in 1907. 5583 out-patients were treated, compared with 5719 in the previous year. The average daily number of in-patients was 157. The financial statement showed that the receipts for the year amounted to £13,846 (including £2385 from legacies). The expenditure was £10,816.

The Health of Falmouth.

The medical officer of health of Falmouth (Dr. A. Gregor) in his annual report for 1908 states that the birth-rate was 23·39 per 1000. The death-rate was 15·09 per 1000, but deducting the deaths of non-residents the death-rate was 13·57 per 1000. The infantile death-rate was 87·12 per 1000 births. 19 cases of notifiable disease were reported during the year. Dr. Gregor mentions that he had received many complaints regarding the filthy condition of the streets of the town, and he calls the attention of the authority to this important matter.

Welsh Quarrymen and Ambulance Work.

Labour in a slate quarry is always more or less dangerous, but judging from the proceedings at a recent inquest held at Llanberis, ambulance work is a good deal neglected. According to the medical evidence, the man on whom the inquest was held died from hæmorrhage consequent on a fracture of the leg. A witness of the accident said that none of the men who were near at the time understood anything about ambulance work. The medical man said that the man died in the quarry hospital the day after the accident, but his life might have been saved if there had been somebody immediately on the spot to check the flow of blood. "He had preached and lectured much on first-aid work and conducted four classes." The coroner, Mr. Penter Williams, regretted that he had to hold a second inquest in the same quarry within a week. He thought that every young quarryman "ought to be compelled to undergo a course of ambulance work, as he was convinced it would be the means of saving many lives." It is strange that this has not already been done, for it would benefit both masters and men. Its neglect must be from heedlessness, not from want of humanity. Indeed, in this case one of the witnesses showed both courage and humanity by taking the injured man in his arms and carrying him to a place of safety from a further fall of rock.

University College of South Wales and Monmouthshire.

The inhabitants of Cardiff are extremely fortunate in the possession of a site for their public buildings which stands unrivalled for its central position and for its extent. It adjoins Cardiff Castle and was purchased a few years ago for a moderate sum by the corporation. On one side of the broad avenue traversing it there has already been erected a magnificent pile of municipal offices which are faced by the equally fine Law Courts, and other public buildings are either projected or in course of erection. Among the latter are the new buildings of the University College of South Wales and Monmouthshire which is at present housed in the old infirmary and in a collection of wood and iron erections standing on adjacent land. At the last half-yearly meeting of the court of governors, which was presided over by Dr. W. T. Edwards, the *doyen* of the medical profession in Cardiff, it was stated that the buildings would probably be ready for occupation in October next. A very complete scheme has been embarked upon, although for the present only a portion of it is being carried out. For this portion, however, there is still required a sum of £35,000 before the structure and the necessary furnishing can be paid for. Complaint was made at the court that the Treasury grants made to Wales were not so liberal as those to Ireland or Scotland. On the basis of population, compared with Ireland, Wales should receive for maintenance £46,000 yearly instead of as at present only £16,000, and on the same basis, compared with Scotland, Wales should receive in building grants £180,000 instead of £50,000. It has been decided to make a determined effort to collect a sufficient sum to enable the new buildings to be opened free from debt.

Infantile Mortality in Swansea.

The rate of infantile mortality in Swansea has never been very low. In 1907 it was 137 per 1000 births and in the previous ten years it averaged 160 per 1000 births. In his last annual report the then medical officer of health (Mr. Ebenezer Davies) pointed out that no less than one-third of the deaths occurred before reaching the age of one month. With a view to lessening this mortality Dr. Rhys Davies, one of the school medical officers for the borough, has been delivering a course of lectures to the mothers of the children attending the infants' department of one of the largest schools.

Feb. 23rd.

SCOTLAND.

(FROM OUR OWN CORRESPONDENTS.)

Grants to Scottish Hospitals.

THE trustees under the settlement of the late Mr. James Dick have allocated a sum of £311,500 to Scottish charitable institutions, chiefly in Glasgow and the West of Scotland. By his will Mr. Dick directed his trustees, after payment of a number of personal bequests and £82,000 to local charitable institutions which he named, to allocate the residue of his estate for behoof of Scottish charitable institutions and schemes to be selected by them. It will be remembered that the will was the subject of a lawsuit as to whether the bequest was void on the ground of vagueness and uncertainty. The House of Lords confirmed the judgment of the Court of Session upholding the validity of the bequest. The list of donations now announced is the first allocation made by the trustees. The total residue of the estate has been estimated at over £600,000, but it may be some time before another allocation is made, as the realisation of the estate will necessarily be protracted. Under this allocation the Glasgow Royal Infirmary gets £80,000, the Western and Victoria Infirmaries £30,000 each, and the Maternity Hospital, the Sick Children's Hospital, and the Samaritan Hospital, all situated in Glasgow, each get £10,000.

Aberdeen Asylum Board.

The annual meeting was held on Feb. 10th. The death-rate for the year has been considerably less than usual. The number of patients has increased during the year from 782 to 798. The proportion of cures has been 37 per 100, rather lower than usual; but there has been a larger proportion than usual among the admissions of patients with previous attacks and of elderly patients in a state of senile decay. The patients at Elmhill, paying the higher rates of board, have somewhat decreased during the year. The decrease may arise in some degree from the current depression in trade, which may make relatives less willing to pay the high rates of board. In the main asylum the reconstruction of the female patients' quarters has been finished and to a large extent newly furnished. Reconstruction on the same lines is being carried forward in the male portion and should be finished in three years. The branch asylum at Daviot has been, as usual, valuable for the health and congenial employment of patients there, but the financial result has not been so good as usual. The net profit earned during the past year was only £286, as against £571 the year before. The directors were glad, however, to find at the end of the year that on the whole accounts the revenue had exceeded the expenditure by £3289. This is reckoned before making any allowance for deterioration of buildings or furniture, but the directors

regard it as fairly satisfactory and as justifying the continued execution of the reconstruction scheme. In recent years there has not been spent on buildings and furniture more than was saved upon the revenue account, as the sums borrowed have not increased; they have rather been growing less. The directors regard the financial position as quite sound, while the care given by Dr. W. Reid and his staff receives the constant approval of the Commissioners in Lunacy. The adoption of the report was moved and seconded.

Feb. 23rd.

IRELAND.

(FROM OUR OWN CORRESPONDENTS.)

The Annual Dinner of the Royal College of Surgeons in Ireland.

THE great professional function of the past week was, of course, the annual dinner of the Fellows of the Royal College of Surgeons which took place on Feb. 22nd. Following recent precedent the occasion was honoured by the presence of the Lord Lieutenant, as a compliment to whom a haggis was included among the delicacies and was ushered into the banqueting hall on a silver dish hung with the Aberdeen colours, preceded in a complete circuit of the room by two skilful pipers of the Royal Scots who received a warm reception. Another Scottish feature of the entertainment was the presentation to Professor A. Fraser of a testimonial in commemoration of the "silver jubilee" of his occupation of the chair of anatomy in the College. These happy features of the brotherhood and hospitality of the occasion show how very far we have travelled on the road of national brotherhood since the reign of James I., when Sir Anthony Weldon noted that it was a saying in Ireland that no member of any other nationality ever prospered who "came within the kenning of a Scotchman." The Earl of Aberdeen asked, if this country was really in the chaotic state in which it was sometimes depicted, "would it be possible for a great audience to listen for an hour and a half to lectures on the subject of health, particularly in matters of consumption?"

Dr. Samuel McKee.

The death is announced of Dr. Samuel McKee, a former well-known Belfast practitioner, at his residence in that city, on Feb. 16th. He had been in failing health for the past two years, and for the last two months had been confined to bed with a nerve lesion; the immediate cause of his decease was cerebral hæmorrhage. A native of Drumbo, county Down, Dr. McKee was born 66 years ago and came as a youth to Belfast. Entering Belfast College as a medical student, he graduated in 1872 as M.D. of the Queen's University. For a time he was at St. Thomas's Hospital, London. He started in practice in a working-class district in Belfast and rapidly gained a lucrative professional connexion. A very kindly and genial man, he was greatly beloved by his patients. He is survived by a widow and four sons.

Health Lectures.

During the past ten days several lectures have been delivered on matters pertaining to the public health. On Feb. 17th at a meeting of the Natural History and Philosophical Society Mr. Alec Wilson gave an address on the Problem of Tuberculosis in the Dairying Industries. On Feb. 18th, at the Municipal Technical Institute, Mr. John Fagan, inspector of reformatories and industrial schools, delivered a lecture on the Training of Girls in Industrial Schools in Ireland, in reference to the management of households, in the particular subjects of (1) the house and housework; (2) food, kitchen work, and housekeeping; (3) needlework and dressmaking; and (4) laundry work. On Feb. 22nd, in the same Municipal Technical Institute, Dr. J. McLiesh lectured on the Care and Education of Feeble-minded Children; while on the same evening at the Diocesan Synod Social Service Committee Sir Robert Matheson gave a lecture on Tuberculosis in Ireland, which was followed by an address from Professor J. A. Lindsay. On the following evening, Mr. J. Beattie, Principal of the Ulster Institution for the Deaf, Dumb, and Blind, gave an address on the Education of the Deaf and Dumb.

Duties of the State to Pauper Children.

At the meeting of the Statistical and Social Inquiry Society of Ireland which was held on Feb. 19th a very interesting paper was read by Mr. S. Shannon Millan, barrister-at-law, on the important subject of "The Duty of the State towards the Pauper Children of Ireland." The lecturer pointed out in the course of his introductory remarks that, "speaking generally, the Poor-laws of this country have been directed to alleviate the hardships attendant on pauperism rather than to reduce the evils out of which pauperism springs"—a radical defect in our legislation which can hardly be too emphatically discussed. He then proceeded to the enunciation of questions which he termed of tremendous national importance but not incapable of solution. The lecturer especially concerned himself with the welfare of the children of the nation and showed that during the quarter century first following the original Poor-law Relief Act of 1838 guardians had no power to board out pauper children. This facility was first furnished them in 1862 for children up to the age of eight years, and this period was extended in three successive subsequent Acts up to 15 years, which is the age-limit still maintained. Down to 1902 no attempt was made to define what was an "orphan" or a "deserted" child, and in the present state of the law no workhouse child can be boarded out unless it comes under one or other of the legal definitions supplied by that Act. Those Acts were purely Irish and did not apply to England. An Act of 1889 enabled the guardians of both countries to assume parental authority over a deserted child and that control continued until the age of 18. In the preparation and passing of the Poor-law Relief Act of 1838 Irish opinion was utterly disregarded. On the recommendation of an Englishman, who had little knowledge of, and less sympathy with, Ireland, said the lecturer:—

> "the plan of exclusive workhouse relief was introduced, not as a system which had proved a success in England, but out of an innate fear that any other system would open the flood-gates of imposture which would be obviated, in the opinion of the promoters, if the test were to cross the threshold of a workhouse. The system proved an utter failure, and in 1847 outdoor relief was legalised. The system of outdoor relief established in 1847 has since grown in an ever-increasing proportion, until to-day the average daily number in receipt of outdoor relief considerably exceeds that in receipt of indoor relief."

The lecturer illustrated the defects of the Irish law by the extreme case of a worthless, drunken mother with several illegitimate children. When such a family were inmates of a workhouse the guardians required the mother's consent before they could board the children out. In England the guardians could do what they deemed best for them. He saw no reason why the English law should not be extended to Ireland and thought that no child should be sent to an industrial school unless sanctioned by the Department for Children to be managed largely, if not exclusively, by women, after boarding-out had been tried and failed. As the expenditure on Poor-law relief has increased from £4920 in 1852 to £216,170 in 1897–08, the question should appeal to the advocates of all the various national fiscal schemes.

Feb. 23rd.

PARIS.

(FROM OUR OWN CORRESPONDENT.)

The Treatment of Neuralgia by Deep Injections of Carbolic Acid Glycerine.

AT a meeting of the Academy of Medicine held on Feb. 9th Dr. Ostwalt reminded his hearers that for some four years he had advocated deep injections of alcohol for neuralgia. All the world was now cognisant of the efficacy of this method even in the most resistant cases. The mode of action of the method was that it interrupted the conductivity of the nerve and so gave a temporary rest to the cortical sensory centre. Dr. Ostwalt had studied the action (in the case of the facial nerve) of substances other than alcohol. He had found that a solution of carbolic acid in glycerine with or without the addition of alcohol gave him far superior results to alcohol alone. The break in the conductivity of the nerve lasted from two to three times as long as that obtained with alcohol, and the chance of a permanent cure was augmented in proportion. The amount of carbolic acid varied from 7½ to 50 per cent., and the amount

necessary for each injection could easily be gauged. This treatment could be used in cases of mixed nerves, so that pain was eliminated without any abolishing of motor function. Dr. Ostwalt added that he had cured sciatica by one or two injections in a few days.

X Rays in the Treatment of Hypophyseal Tumours.

At a meeting of the Hospitals Medical Society held on Feb. 5th M. Béclère, after having enumerated the various affections which go more or less together with acromegaly and gigantism, such as adiposity and infantilism, said that, in his opinion, all these symptoms were due to some hypophyseal mischief. We can, he went on to say, do but little for these lesions. If we suspect syphilis we can give specific treatment or do a hypophysectomy under certain conditions. But this operation is only partial and palliative. M. Béclère asked whether a tumour of the hypophysis might not diminish under the influence of the x rays, so that the functional troubles might improve and the compression symptoms be lessened. In thyroid tumours the rays not only diminish the tumour but also improve the troubles due to the secretory disturbance. He had made trial of the rays in acromegaly. The rays were applied to the frontal and parietal regions and several patients had undergone the treatment with remarkable results.

Laryngostomy in Stenosis of the Larynx followed by Dilatation.

At a meeting of the Academy of Medicine held on Feb. 9th M. Sieur gave an account of two patients suffering from stenosis of the larynx. In the first case the trouble was due to trauma and in the second to typhoid fever, and in this one the cricoid region was blocked by fibrous tissue. Both were treated by laryngostomy and dilatation by an indiarubber bougie. The first patient has been well for eight months and the second, who a year ago could only tolerate a No. 14 Nélaton sound, can now take a tube No. 46.

A Practical and Economical Method for Sulphuring Ships.

At a meeting of the Academy of Medicine held on Feb. 2nd M. Chantemesse and M. Borel discussed the above-mentioned subject. Sulphur dioxide is to-day recognised as the most efficient method of destroying rats, fleas, and mosquitoes on board ships, whether it be obtained by the direct combustion of sulphur (which entails the risk of fire), by using liquid sulphur dioxide (which is costly), or by using some special apparatus for the production of the gas. Most of the apparatus at present in use is costly, mainly owing to patent rights, and, moreover, works very slowly. In view of these deficiencies M. Chantemesse and M. Borel have devised a simple form of apparatus which they demonstrated to the Academy. The apparatus is not patented and is constructed from objects in common use. By means of it a large ship can be disinfected in two or three hours. It consists of a stove for burning the sulphur, of a force-pump to liquefy the gas, a reservoir, a gas-holder, and a fan which drives the gas into a distributing pipe. The whole can easily be fitted up on a lighter, and any sanitary maritime service can easily fit up this apparatus with the plant at its command.

Animal Radio-Activity.

The permanent secretary of the Academy of Sciences read on Feb. 8th a new note from Commandant Darget, the discoverer of the "v" rays, who showed recently that the human forehead emits rays analogous to those of radium since they act upon photographic plates enveloped in three wrappings. Other parts of the body, and particularly the middle region of the chest and the extremities, emit the same rays, as their discoverer has shown by new photographs in his recent contributions. Animals and doubtless plants are likewise radio-active. Commandant Darget showed a very beautiful photograph of the lobes of a sheep's brain which he obtained by placing the triply wrapped plate on the animal's head whilst it was dying.

Curettage and Immediate Radiotherapy in the Treatment of Epithelioma.

M. Lenglet and M. Sordeau laid before the French Society of Dermatology and Syphilology at its February meeting the results of three years' treatment of 122 cases of epithelial cancer and especially of superficial epitheliomata. 87 per cent. of cures were obtained by the method of combined curettage and radiotherapy. The authors treat every epithelioma, irrespectively of its situation, by a preliminary vigorous scraping. Absolute hæmostasis is obtained by simple compression and immediately after the operation irradiation is performed on the fresh wound without any dressing, the dose being 6 or sometimes 7 H (a measure of quantity which the authors explain). The rays employed are at least No. 6. The second sitting is not held till the reaction has entirely finished, that is, in from three to four weeks, and the sittings follow each other until cicatrisation is complete. By this means a complete cure is obtained.

Electro-Diagnosis.

M. d'Arsonval communicated to the Academy of Sciences on Feb. 15th a special method of electro-diagnosis devised by Dr. Guyenot. It consists in an application of induction currents by the instantaneous discharge of a condenser described for the first time by M. d'Arsonval in 1876. It allows both the progress of the results of treatment in cases of motor paralysis to be gauged by an exact method and also the immediate detection of any simulation or exaggeration of symptoms in such cases. Its use is especially indicated in the assessment of industrial injuries.

The Relief of the Blind.

A permanent committee of investigation into the methods of relieving the blind has been established by the Home Office to study the problems involved in the prevention of blindness in France, the effect which the Old Age Relief Act will have on blind paupers, and on the help which can be afforded to the blind by the establishment of workshops for them. The committee includes the Director of Public Assistance and of public health and is chiefly composed of teachers at schools for the blind and of blind people themselves.

Feb. 23rd.

SWITZERLAND.

(FROM OUR OWN CORRESPONDENT.)

Nephrectomy in Tuberculosis of the Kidneys.

Professor M. Krönlein, Director of the Surgical Clinique in Zürich, has just published the results of 71 nephrectomies which he had performed between 1890 and 1908 in cases which have been all carefully followed up. 18 cases died, 53 had survived. 14 of the 18 fatal cases died within the first year after the operation. Very serious cases recovered remarkably. Tuberculosis of other organs (lungs, joints, genitals) was often arrested by the operation, and even secondary tuberculosis of the bladder often cleared up as a consequence. The deaths were generally due to miliary tuberculosis.

Investigations into the Radio-activity of Swiss Springs.

These investigations have been carefully made by M. de Lurg in Fribourg and Professor A. Schweitzer of the Polytechnic Federal School in Zürich. The emanation of various springs has been tested by photographic and by electric methods. The well-known springs of Andeer, Baden near Zürich, Fideris, Pfäffers, and St. Moritz were found to contain one to two units (Mache) of radio-active substances. Three Swiss springs gave better results: Solis (near Thresis), 8·2; Larey-les-Bains (Valais), 11·0; and Discutis, in the Rhine Valley, a ferruginous spring containing 46·7 units of radio-active substances. It thus vies with the strongest springs known in Europe—viz., the Bütt spring in Baden-Baden, some Gastein springs, the Joachimstal spring, and the Italian spring Lacco Ameno on the island of Ischia. The therapeutics of emanation have still to be studied, but good results have been already obtained in rheumatic and neuralgic affections, anæmias, and arterio-sclerosis.

Zürich, Feb. 20th.

VIENNA.

(FROM OUR OWN CORRESPONDENT.)

The Question of Wet Nurses.

THE results of theoretical and practical studies conducted at the "Säuglingsschutz" (Infants' Institute) in Vienna have recently been published and some of the conclusions arrived at may be mentioned here. Certain leading principles are recommended for adoption by legislation for the welfare of

the public. (1) No woman should be allowed to hire herself out as wet nurse unless her baby is at least six weeks old and weaned. This would not only insure better prospects for the baby and its health but it would also enable any symptoms of disease or weakness in either the wet nurse or her child to be detected. Syphilis is the special danger which threatens babies who are handed over to wet nurses. If the nurse's baby is suckled by the mother for six weeks without any syphilitic symptoms appearing one may be nearly convinced of the absence of the disease. Therefore, the next recommendation is (2): the examination of the baby of the nurse before hiring the nurse should be a matter of obligation, or a testimonial by a medical man should be produced. (3) Private people should not be allowed to do business in the shape of finding wet nurses for families. This should be done only by "infants' institutes" whereby conscientious adherence to the rules of science would be insured. On the other hand, the would-be wet nurse should be induced to leave her child with the infants' institute, where it could be looked after much better than by a foster mother. The danger for these, mostly illegitimate, children is enormous: the mortality among them is twice as high as that of children cared for by their own mother. The imminent regulation of medical studies together with the proposed new "Public Health Act" will give the medical men in Parliament ample opportunity to bring this matter to the notice of the legislators.

When shall a Medical Appointment be Boycotted?

At the last meeting of the local medical councils of Austria (Aerztekammertag) Dr. Grün laid before the meeting the following proposals which were adopted. The appointment of a medical man to a public post is an affair affecting all members of the profession and therefore certain requirements must be fulfilled before a boycott may be proclaimed as affecting any such appointment. The following rules, it was decided, should be followed. If an appointment is apparently incapable of producing the so-called minimum of payment for existence applicants should be warned. If one or several practitioners have been dismissed unjustifiably or if there is a difference on grounds of principle between the practitioners and the corporation offering an appointment a boycott may be proclaimed. If a practitioner has been dismissed on account of difference of opinion as regards remuneration, so that anyone accepting this post would undersell the former holder, or if the existence of other practitioners is put in question by the acceptance of an appointment by a newcomer, the post may be proclaimed boycotted. A simple disproportion, however, between the number of practitioners and of inhabitants does not justify such an act.

Scarcity of Anti-diphtheritic Serum.

Much anxiety was caused recently amongst the population of this city by some incautiously published reports from the Serotherapeutic Institute, reprinted without the necessary explanations by the lay press. In the report the fact was conceded that the quantity of anti-diphtheritic serum was not sufficient to meet, for a prolonged period, the demand in case of an epidemic. Public comments were soon made, and both in Parliament and at a meeting of the town representatives severe charges were made against the managing board of the institute. Therefore Professor Paltauf, the director of the institute, in a communication to the board of health, explained the reason of the unsatisfactory conditions. The moderate finances of the institute allowed only 20 horses to be kept in the stabling for use in the production of serum. On the other hand, the space allotted to the stabling was also so small that it was impossible to adapt it for more animals. The reasons for lack of serum were lack of stables, lack of animals, and lack of funds. The quantity of serum at present in hand was sufficient to meet even urgency demands for a few weeks. What was wanted was at least 40 horses, and it seems that bureaucracy alone is responsible for the insufficient funds allotted for this purpose.

Proposed Instruction in Medical Ethics.

In a petition presented by the "Vienna Aerztekammer" to the Board of Education the suggestion was made of creating a special chair for the teaching of medical ethics and sociology to graduates. The suggestion contained also a complete plan of the curriculum, which should comprise five distinct subjects: the relation of the practitioner towards the general public and the law (criminal and civil); the medical man and the medical local organisation; the medical man and the patient, a point which embraces all questions as regards the duties and the rights of the practitioner arising out of the patient having committed himself to the care of the medical man and also the duties towards his fellow practitioners, consultants, and hospitals. Contract practice, club practice, or what is called with us "cassenpraxis," together with the examinations for insurance companies, form another part of the study, whilst instruction as regards the legal requirements of notification of diseases—infectious or industrial or occupational—is also provided for. The second section of the curriculum deals with the study of social hygiene. The following suggestions are made as worth consideration: history of social hygiene, social statistics (comprising morbidity and mortality of various classes, occupations, races, ages, and both sexes), and special hygiene, considering chiefly food and dwellings.

Injection of Combinations of Narcotics for Chronic Pains.

In a communication to the Medical Society Professor Schlesinger explained his method of using a combination of morphine, dionin, and scopolamin for chronic painful affections to obviate the permanent use of morphine. Such indications are now given chiefly in cases of neoplasmata in nervous structures, in the vertebral column, or in cases of grave neuralgias. The solution consists of scopolamini hydrobromati, 0·0025 gramme (1/30 grain); morphii muriat., 0·2 gramme (3 grains); dionin, 0·3 gramme (5 grains); aquæ destill., 10·0 cubic centimetres (⅓ of an ounce). Of this solution from 10 to 20 drops are injected hypodermically daily, going up to two cubic centimetres a day (40 drops) if necessary. If freedom from pain is still not obtained the dose of scopolamin is increased to double the strength. Professor Schlesinger has never been forced to use a stronger solution. Sometimes it is advisable to use the scopolamin alone and follow it up by an injection of morphine-dionin alone. In any method the result is most gratifying. Within from 10 to 20 minutes the pain vanishes and does not reappear for hours or even for the whole day. The patients are not stuporous, as in the scopolamin anæsthesia of the gynæcologist; they can keep up a conversation, and admit being free from pain. In several cases the injections have been continued for weeks and months without producing intoxications. Several of these patients had received before the commencement of the combined injections excessive doses of morphine (from 3 to 5 grains per day) without satisfactory result. Under the new plan the morphine dose was diminished to one tenth of its former strength without the patients showing any symptoms of abstinence.

Feb. 20th.

BUDAPEST.

(FROM OUR OWN CORRESPONDENT.)

The First Hungarian Darwinian.

AT present, when the whole scientific world is engaged in the commemoration of Darwin on the occasion of the centenary of his birth, it will not be without interest to revive the memory of Professor Theodor Margo, that great Hungarian scientist who first gave his verbal and literary support to Darwin's theory and pointed out in public and university lectures what a flood of light his assumption threw upon the study of evolution and selection. Everybody knows that Darwin's great work, "The Origin of Species," was looked on with deep suspicion by many conservative scientists. Darwin himself complained in his autobiography that his statements were often misrepresented. Darwin has been no less misunderstood by those German theorists who have deduced the most ridiculous and far-fetched conclusions from his work. Theodor Margo, however, at once perceived Darwin's true meaning and became his whole-hearted disciple. He founded a school to teach the theory and supported it against a great number of foreign zoologists by his essay, "Darwin and the Animal World," his book, "General Zoology," and his memorial lectures on Agassiz, Darwin, and Owen, held in the Hungarian Academy of Sciences. In these he gave proof not only of his sincerity but also of his clear sight and his intuition in recognising the importance of the new theory. Our zoologists

of to-day, foremost among them Professor Geza Entz, are all Margo's pupils. The Hungarian Society of Natural Historians will arrange a scientific festival on the occasion of the jubilee of the publication of "The Origin of Species," and will assuredly not forget to honour also the memory of the first Hungarian Darwinian, Professor Margo, who died 13 years ago.

Roman Waterworks Still in Use.

The town committee of Szamosvár has decided to utilise the remains of the thousand years old water-mains and reservoirs which have remained since the Roman occupation. The water-mains were discovered by Professor Ornstein, an archæologist, who states that the great reservoir and the extensive canals served as the water-supply of a large late Roman military camp—Congricastrum. The great reservoir lies on a high hill near the town. The dirt which has collected in the basin and mains during many centuries has been removed, and now it is almost incredible that they should be a thousand years old. The medical officer of the town has declared the water basin and the mains to be fit for use.

Tax on Bachelors.

In countries where the increase of the population is slow different means have been proposed for the promotion of marriages and the checking of the "one child" system. The sad consequences of this habit are already felt in Hungary. But the stagnation of the birth-rate is rather the outcome of the low number of marriages. The great extension of the "feminist" movement involves the decrease of marriages. Thus the idea was evolved to tax bachelors and our Bulgarian neighbours have definitely done it according to the *Budapesti Hirlap*. The Sobranje has passed a new law which taxes every single man over 30 years of age ten francs yearly. It is a little difficult to understand the intention of this law. The penalty is so small that it can hardly become a compulsory means for inducing bachelors to marry. The man who is fond of a single life gladly pays the penalty. If the tax were 100 francs then perhaps this law could have a useful effect.

What's in a Name?

The Hungarian Government has taken prompt action against the use of names of harmless substances covering dangerous trade articles. For instance, it is a common practice here to buy "essence of vinegar" for household purposes and to dilute it at home. However, considering the fact that essence of vinegar is strong acetic acid the innocent sounding name of which has led many persons to use it without dilution, with untoward and even fatal results too, the Government is to be commended for its action of forbidding all persons after Jan. 1st, 1909, to sell under the name of "vinegar" crude or rectified acetic acid containing more than 15 per cent. of the pure acid. When stronger than this it must be properly labelled and put up in a special form of bottle, and attention must be called to the fact that it is dangerous unless diluted. Similar action ought to be taken in the case of other misleading names, such as "sugar of lead," "wood alcohol," and "salts of lemon" too. The last of these, of course, has nothing to do with lemons at all but consists of poisonous oxalic acid.

Feb. 20th.

NOTES FROM INDIA.

(FROM OUR OWN CORRESPONDENTS.)

Mortality and Sanitation.

FIFTEEN years ago those who had the interests of India at heart were actively engaged in discussing what they thought to be the great problem of the near future—that of relieving India of a surplus population through emigration. Time and chance have, however, substituted a wholly different set of conditions. The change as seen in Bombay is strikingly illustrated by the latest report of the Sanitary Commissioner. In this Presidency last year the birth-rate, 33·03, was slightly in excess of the death-rate, which was 32·82, and this is the first time since 1900, with the exception of 1905, that this excess has been recorded. One cannot place great confidence in these statistics, but, making a generous allowance for error, it seems certain that in a period of eight years the population has decreased and has not been naturally increased. If any generalisation can be permitted from these facts it is that there is still great need for popularising inoculation against plague and for improved sanitation throughout the Presidency. Improvement in sanitation cannot be effected by Government alone. The burden rests upon the local authority, but Government is willing to bear the burden up to a limit of 50 per cent. of the cost and to give to the sanitary engineer skilled assistants to take up the work of schemes that require immediate attention. The introduction of this policy has already resulted in the acceleration of various water-supply and drainage schemes, but a still livelier pace is necessary and that can be obtained only by the efforts of the municipalities. It is now necessary to consider not emigration schemes for an over-populated district but schemes for making the conditions of life such that the population may be augmented by the natural process.

The late Dr. Argyll Robertson.

The death of Dr. Douglas Argyll Robertson has already been recorded in THE LANCET but the following notes may be of interest. Dr. Robertson went to Gondal just before Christmas on a visit to the Thakur Sahib, whom he had known for a quarter of a century as tutor and friend. He was accompanied by Mrs. Robertson, Miss Robertson (a niece), and by Kunveri Shri Taraba Sahib, youngest daughter of His Highness, who had been educated in England under Dr. Robertson's care. Soon after his arrival in Gondal Dr. Robertson was taken ill and to the regret of all he succumbed on Jan. 3rd. By special request the body was cremated on the banks of the river Gondli, the funeral service being read by the Rev. G. S. Stevenson. The ceremony was deeply impressive. According to ancient custom no Hindu Raja can take part in a funeral procession or wear a black or white turban as a sign of mourning, nor do the ladies of a princely family go to the burning ghat; but all these customs were broken by the Thakur Sahib and his family out of friendship for the distinguished surgeon. Not only so, but at the end of the funeral service the Thakur Sahib himself kindled the funeral pyre of his guru and friend. Hindus and Mussulmans united in closing their shops as a mark of respect to the deceased and in sending messages of condolence to Mrs. Robertson.

Sikhs in the Indian Medical Service.

The Government of India at the instance of the Punjab Government arranged some months ago to take steps to amend the regulations so as to allow Sikh officers of the Indian Medical Service who wish to do so to keep their hair long and to wear a *pagri* with uniform. It has now been decided by the Army Council in England that in any future cases which may occur of Sikhs being admitted on probation to the Indian Medical Service and attending the Royal Army Medical College and Royal Army Medical Corps Depôt they will be permitted, should they wish to do so, to keep their hair long and to wear a *pagri* with uniform instead of a helmet.

The Water-supply of Coonoor: Inadequate Hospital Accommodation.

It is only a few years ago that the water-supply of Coonoor was completed and the system handed over to the municipality of that town, and already I hear that it is inadequate for the wants of the town. An Engineer officer has been sent to the station to inquire and report. The hospital, too, at Coonoor is of such limited accommodation that many applications for admission have had to be refused. The present medical officer, Major R. Bryson, I.M.S., has accordingly suggested that a more commodious building should be erected which it is estimated will cost Rs.50,000.

Death of Lieutenant-Colonel O'Donnell, R.A.M.C.

The death took place on Jan. 7th at Kirkee, after an illness lasting a few days, of Lieutenant-Colonel J. J. O'Donnell, R.A.M.C., a very popular medical officer and a keen sportsman. The funeral took place on Jan. 8th and was very largely attended.

Jan. 21st.

AUSTRALIA.

(FROM OUR OWN CORRESPONDENT.)

Medical Inspection of School Children.

A REPORT has been issued by the Department of Public Instruction in New South Wales on the physical condition of children attending public schools during 1907–08. A limited

system of inspection was introduced early in 1907, the medical inspector being Mr. R. E. Roth. Subsequently Dr. May Harris was appointed to the Newcastle district and some country centres have also been visited in the interior. In the metropolitan area 30,468 children were examined, of whom 10 per cent. were considered to require treatment for various ailments. The great bulk of the defects were faulty vision and post-nasal growths and one-fourth of the total were in infant classes. In the Newcastle district 3500 children were examined and 40 per cent. returned as defective, a difference which probably represents largely a personal equation of opinion. The anthropometric investigations are the strongest feature of the present report and much interesting information is presented in a series of charts and drawings. A comparison of the New South Wales children with those of other countries shows them to be taller at all ages than British children, but the latter are heavier at some ages. London children are below the normal at all ages. Glasgow children are below and the "poor" of Glasgow much below the "poor" of Sydney. Compared with Tasmanian children the New South Wales figures have a slight advantage. A limited comparison with Germans shows them to be heavier but much shorter than Sydney children. The children examined in the southern tablelands were the heaviest proportionally and those of the central tablelands the tallest. The western plains children were tall but deficient in weight, and the same was noted in Western Riverina. Central Riverina children were exceptionally well proportioned. The three latter districts represent the very hot and dry areas in summer. The greatest number of cases of defective vision were not serious and 93 per cent. of boys and 88 per cent. of girls possessed "good sight." An inspection of the teeth of Sydney children was voluntarily undertaken by the Dental Association whose president, Dr. Sims Lever, states that of those examined 94 per cent. have decayed teeth. The usual difficulty as to treatment is noted. Only 25 per cent. of parents notified took any action. Mr. Roth endeavoured to increase the proportion by holding "health talks" to parents in the schools and the results are said to have been "gratifying."

Hospital Finance.

The two leading Sydney hospitals are in financial trouble. The Prince Alfred Hospital has an overdraft of £7000 and the Sydney Hospital a deficit of £8500. It is proposed that the Government should double all sums subscribed up to £5500 instead of up to £4000 as at present. If some improvement is not made the only alternative will be to curtail the scope of the institutions by a reduction of beds.

A Remarkable Death.

An instance of the absence of symptoms in extensive visceral disease occurred lately in a country town in Victoria. Two residents had a dispute at a railway station and came at length to blows. Four "rounds" were fought when one of the combatants, a middle-aged man, remarked that he was "out of condition" and would not continue. Shortly afterwards he became extremely ill and died on the following day. A post-mortem examination revealed the cause of death to be peritonitis due to the rupture of a hydatid cyst of the spleen. It was stated that the spleen consisted of a thin shell of tissue which had covered a large cyst occupying the whole of its substance. No suspicion of the condition had existed during life.

The University of Melbourne.

Under the terms of the will of the late Dr. Stewart, who formerly practised at Ballarat, the University of Melbourne benefits to the extent of £25,000. Mr. F. D. Bird, the lecturer in surgery, has been granted leave of absence to visit Europe. Mr. G. A. Rennie, M.S. Melb., F.R.C.S. Eng., will act as lecturer in the interim. Dr. Jamieson resigned his lectureship on medicine at the end of last year, and Dr. H. C. Maudsley has been appointed as his successor.

Railway Incident.

On the night of Dec. 8th the railway traffic between two suburban stations near Melbourne became stopped owing to the inability to get any response from the Sunshine Junction signal-box. A train was at length sent cautiously forward and the porter-signalman in charge of the Sunshine box was discovered to be in a dazed condition. He stated that he had been seized with severe internal pain and had lost consciousness. The Government medical officer has since reported on the case and states that the man "suffered from severe colic and probably fainted."

Medical Board of New South Wales.

Sir Philip Sydney Jones has been appointed President of the Medical Board of New South Wales in the place of the late Sir Arthur Renwick.

Medical Inspection of Children in Victoria.

The new Premier of Victoria, Mr. J. Murray, made a speech outlining the policy of the Government. It was stated that a beginning would be made with a system of medical inspection of school children which Victoria has been without up to the present. It was also stated that the Government intended to complete the Acute Mental Diseases Hospital at an early date. This project was shelved by the late Government and is to cost £200,000.

Jan. 25th.

Obituary.

JOHN LINDSAY STEVEN, M.D., C.M. GLASG., F.F.P.S. GLASG.,

VISITING PHYSICIAN TO THE WESTERN INFIRMARY, GLASGOW.

WITHIN the last four years Glasgow has lost three of her most prominent consulting physicians—Sir William T. Gairdner, Sir Thomas McCall Anderson, and Dr. James Finlayson—all of whom were attached to the staff of the Western Infirmary. To those honoured names we must now add that of Dr. John Lindsay Steven, also a well-known physician, a member of the visiting staff of the same infirmary, and a successful teacher in the Glasgow School of Medicine. His fatal illness was very short, for he was busily engaged in work until ten days before his death. Dr. Steven was born in 1858 and was educated in the University of Glasgow, where in 1880 he graduated M.B., C.M. with honours, and four years later proceeded to his doctorate with "high commendation." After spending some time in study abroad he was appointed assistant to the professor of clinical medicine in the University. A year later he received in addition the appointment of pathological chemist to the Western Infirmary. Dr. Steven was attached to the Royal Infirmary Dispensary and also became an external physician to the Royal Hospital for Sick Children in 1889. For some years he had shown great interest in pathology and in 1890 he became pathologist to the Royal Infirmary and lecturer in pathology at St. Mungo's and Queen Margaret Colleges. After some years of pathological teaching Dr. Steven gave up that department and devoted himself exclusively to teaching clinical medicine. In 1895 he was appointed physician to the Royal Infirmary and in 1906 he was appointed, in succession to the late Dr. Finlayson, visiting physician to the Western Infirmary, a post which he held at the time of his death.

Dr. Steven held various examinerships in medicine and pathology, and was at one time editor of the *Glasgow Medical Journal*. He was honorary librarian to the Faculty of Physicians and Surgeons, of which he became a Fellow in 1889. He was keenly interested in medical education and was appointed a representative of the faculty on the General Medical Council in 1903. In the autumn session of that body in 1904 he brought forward a motion to refer to the Examination and Education Committee a consideration of the manner in which the fifth year of the medical curriculum was being swallowed up by the preliminary scientific studies; the motion also suggested alternative methods of dealing with an undoubted evil. He was a fitting champion of the claims of clinical work to the lion's share of the curriculum, and it is interesting to recall his protest at this time when its force is recognised by nearly all who are concerned with medical education. The present state of feeling in the matter which has already borne fruit must be considered in considerable part due to Dr. Steven's arguments.

Dr. Steven was a thorough exponent of internal medicine in all its branches and his teaching was especially valuable as it was founded on an equal practical experience of the wards and the pathological laboratory. He wrote papers dealing with morbid conditions of the heart, lungs, pancreas, and kidneys, and he proved himself free of therapeutic prejudice by his contribution on Surgical Treatment of Diseases of the

Stomach to THE LANCET in 1904. He had previously contributed to our columns his lectures of 1887 on Fibroid Degeneration and Allied Lesions of the Heart. He published three books—namely, "Practical Pathology" (1886)—which afforded a serviceable manual at a time when histology was nearly a *terra incognita* to most students and when laboratory facilities for its exploration were very sparse. In 1892 his monograph on the "Pathology of Mediastinal Tumours" did much to establish their rational classification, especially by his clear differentiation between Hodgkin's disease and the primary mediastinal lympho-sarcomata. His last book appeared in 1900, when he published a set of lectures on Clinical Medicine containing the records of many well-observed cases covering a wide field of internal disease. In Glasgow Dr. Steven was recognised as one of the best of the teachers and consulting physicians, and his death will leave a gap not easily filled. By the members of the profession he was esteemed not only on account of his ability but also for his genial disposition and upright character.

CHARLES HENRY FELIX ROUTH, M.D. LOND., M.R.C.P. LOND., M.R.C.S. ENG.

BY the death of Dr. C. H. F. Routh the medical profession in London has lost one of its oldest and best-known members. Dr. Routh was born at Malta on Jan. 4th, 1822, but his youth up to the age of 15 years was spent in Canada, where his father, Commissary General Sir Randolph Routh, K.C.B., was in command of the Commissariat Department. He then came to England and entered as an arts student at University College, London, in 1837. In 1840 he joined the Medical Faculty and became a student at University College Hospital, where he soon made his mark and obtained many honours, amongst which may be mentioned the Fellowes gold medal for essays in clinical medicine which were published in the *Medical Gazette* between 1845 and 1850. He held most of the resident appointments at the hospital under such distinguished men as Dr. C. J. B. Williams and Dr. Anthony Todd Thompson, Robert Liston, Dr. W. H. Walshe (the first professor of pathology), and Dr. Murphy (the physician accoucheur). It was whilst acting as resident obstetric assistant to Dr. Murphy and afterwards as his private assistant that his interest in gynæcology was aroused, and he always attributed his success to the teaching and practical assistance of his chief to whom he was warmly attached. He entered keenly into athletics and was proficient in rowing and boxing, the fashionable physical exercises in 1840–50. He showed early in his career a facility for public speaking and was during his student days President of the Literary and Philosophical Society of University College.

He qualified as M.R.C.S. Eng. in 1843 and graduated M.B. with honours at the University of London in 1844 and M.D. in 1845. In 1859 he became a Member of the Royal College of Physicians of London. In order to become familiar with continental practice he attended the cliniques in Paris, Prague, and Vienna, in which city he became acquainted with Professor Semmelweis, whose discoveries of some of the causes of puerperal fever and of some of the means of its prevention he communicated to the Royal Medical and Chirurgical Society in his first public paper in 1848, entitled, "On the Causes of the Endemic Puerperal Fever of Vienna." Dr. Routh showed that in the Vienna Hospital out of 3000 cases attended jointly by midwives and medical men, 500 died, whilst of 3000 cases attended by midwives alone only 40 died. Similar differences were noted in Prague, Strasburg, and Paris. Dr. Routh showed that Professor Semmelweis had proved for the first time that the "medical attendant could communicate the disease by retaining a portion of the poison *subter ungues* and subsequently examining another woman," and the explanation of this difference of the mortality was proved to be due to the fact that the men students were performing necropsies and getting practical midwifery instruction on the cadaver, whilst the midwives did not perform necropsies and were taught with the leather "phantom."

Professor Semmelweis stopped the necropsies and made the students wash their hands in a solution of chlorine before and after every examination, with the result that whereas in 1846, when the above discovery was made, 459 women died out of 3354 women confined, in 1848, when the above precautions were adopted, only 45 women died out of 3356 confined. Notwithstanding this remarkable and convincing statement the medical profession in London and abroad was not then prepared to accept the views enunciated, and little or nothing was done to put into practice the important advice given. Dr. Routh was not attached to any lying-in hospital so that he could only adopt antiseptic methods in his private practice of midwifery. It may be mentioned that his favourite antiseptic, both in midwifery and gynæcology, was iodine. It is possible that if he had had the opportunity of testing its merits by comparing puerperal cases treated by iodine vaginal douches and cleanliness with cases treated without any such precautions, the same marvellous results would have been exhibited in lying-in institutions as were shown when the use of perchloride of mercury douches was afterwards introduced. Papers read at the Royal Medical and Chirurgical Society were then published exclusively in the society's "Transactions," and Dr. Routh's paper, and with it the whole subject of antiseptic and aseptic midwifery, was buried till Pasteur's researches and Lister's discoveries of surgical antisepsis again brought the subject to the front. Dr. Routh, however, lived to see the proof of Professor Semmelweis's views, to which he had given his strongest support, firmly established, and to see puerperal septicæmia practically banished from lying-in institutions. Quite recently much has been done to acknowledge the discoveries of Professor Semmelweis and due credit has been given to Dr. Routh for making them known in England.

Dr. Routh was elected a Fellow of the Medical Society of London in 1848, and for over 50 years was a constant attendant and speaker at its meetings, becoming in turn orator (1859), Lettsomian lecturer (1864), and President in 1875. For a few of these years he practised general medicine, writing papers on "The Fallacies of Homœopathy" (1852), "Mortality of Infants" (1859), and "Pneumonia," and he also wrote an important work on "Infant Feeding" in 1860, which ran through several editions and was reproduced both in America and on the Continent of Europe.

In 1855 Dr. Routh was elected to the post of assistant physician to the Samaritan Free Hospital for Women. He was one of the first to follow the example of Spencer Wells, who came on the staff in 1856, in performing ovariotomy at that hospital, then a private house in Orchard-street. He has thus seen the progress of ovariotomy since its mortality was 34 per cent. to the present day when the operation in uncomplicated cases is practically free from danger. Dr. Routh remained on the active staff of the hospital till 1890 when he was appointed consulting physician. His vast gynæcological experience bore fruit in a number of papers on the subject, the first of which, on Menorrhagia, was read at the Obstetrical Society of London in 1860. His Lettsomian lectures on Fibrous Tumours of the Uterus in 1864 brought up to date all that was known about uterine fibromyomata. He was one of the council when the Obstetrical Society of London was founded in 1859 and was the last surviving member of that council. He was also one of the founders of the British Gynæcological Society, and subsequently President in 1890.

Dr. Routh contributed many papers and specimens at both these societies. He was a fearless debater and an eloquent speaker both in English and French; he was tenacious of his own opinions, and determined in acting upon them. His loyalty to his friends through good and evil report was one of his most marked characteristics, and his simple trust in his fellow-creatures was the outcome of his simple faith in his God. His personal character was singularly free from reproach. He was a devout Christian and interested himself in many organisations for the moral and spiritual help of others. He often gave Gospel addresses at institutions, such as the Cripples' Home for Girls, which he helped to found in 1851, and whose inmates he addressed almost weekly for 50 years. Dr. Routh had survived most of his patients and many of his friends, but those who remain will miss his kindly, hearty companionship and his devoted service when his help was sought. He was attended in his last illness by Dr. C. Theodore Williams, the son of his former teacher, Dr. C. J. B. Williams, who has retained a cordial friendship with his father's favourite pupil.

Dr. Routh leaves a widow, to whom he had been married over 56 years, and three sons and two daughters survive him. Two of his sons, Dr. Amand Routh and Mr. R. H. F. Routh, are in the medical profession.

THOMAS CARLYLE PARKINSON, M.D. SYD.

A WIDE circle of friends both in this country and in his native land, Australia, will hear with deep regret of the untimely death of Dr. Thomas Carlyle Parkinson which occurred on Feb. 4th. Dr. Parkinson had recently been appointed a member of the Commission for the Investigation of Plague in India and was working at the isolated laboratories at Elstree placed at the disposal of the commission by the Lister Institute. He was engaged upon an experimental inquiry into protective inoculation against plague and in the course of his experimental work he unfortunately contracted an accidental infection and died after a short illness from pneumonic plague. Dr. Parkinson's death terminates a career which gave every promise of great distinction. He started his medical studies in 1901 at the University of Sydney, New South Wales, and in each of the five years of his course he gained first-class honours and the premier place. He graduated in 1906 and was awarded the University medal for special distinction. During his undergraduate career he also obtained the Renwick scholarship for natural science and comparative anatomy and the John Harris scholarship for anatomy and physiology. In 1906 he held the position of resident medical officer to the Royal Prince Alfred Hospital, Sydney; in 1907 he was resident pathologist to the same hospital, and in 1908 was for a time junior medical officer at Callan Park Hospital for the Insane.

Dr. Parkinson early showed his bent for scientific investigation and both as a student and during his post-graduate work at Sydney contributed several papers to the Journal of the University of Sydney Medical Society. In April, 1908, he was awarded the James King Travelling Scholarship and came to this country to continue his studies and worked at the Lister Institute until October, when he was appointed to a position on the Indian Plague Commission. Dr. Parkinson was possessed of an amount of reserve which prevented him from making friends quickly. His acquaintances will remember him simply as a keen worker, but his comrades realise that they have lost a good and trusted friend who gave his life striving in the interests of others, doing a man's work as a man should.

WILLIAM PARSON, M.R.C.S. ENG., L.S.A., J.P.

ALTHOUGH he had given up active work for some years and lived in practical retirement, the death of Mr. William Parson of Godalming is an event which will be widely regretted and mourned, and he will be gratefully and affectionately remembered by a large circle of former patients and friends. He died on Feb. 8th at his residence, 17, High-street, in his seventy-fifth year, after a lingering illness. During his prolonged career as a medical practitioner Mr. Parson led a most strenuous and useful life, and his services were most highly appreciated, not only in Godalming itself but over an extensive area of the surrounding district. He was regarded with the greatest respect and esteem by all with whom he was brought into contact; and when he retired the keenest regret was universally expressed.

After passing through his early education at St. Paul's School, Portsmouth, William Parson entered upon his professional studies at University College and Hospital in the early "fifties," and it was there that he passed through his medical curriculum, under the tuition and training of the eminent professors and teachers who then held office. He was a resident pupil with the late Sir William (then Dr.) Jenner, and this association laid the foundation for a life-long intimate friendship. He obtained the diplomas of M.R.C.S. in 1855 and L.S.A. in 1856, subsequently becoming a Member of the Society of Apothecaries where he had been apprenticed. After qualifying Mr. Parson held the appointment of house surgeon at the Hospital for Sick Children, Great Ormond-street. He afterwards settled at Haslemere, but only for a short time, and in 1858 moved to Godalming on account of the illness of his father, which soon ended fatally and he succeeded to his practice. He was the third generation of the same family who occupied the house in High-street as medical practitioners, the practice having been originally founded by his grandfather.

Mr. Parson not only enjoyed an extensive private practice but was the first medical officer of health appointed for Godalming and neighbouring part of the county, a post which he held for 27 years. He also served as medical officer to the Hambledon Union Workhouse for 28 years and as public vaccinator. He, moreover, took an interest in municipal affairs, entering the town council in 1864, and in 1866 was elected Mayor of Godalming. Subsequently he declined to serve as alderman but was placed on the commission of the peace for the borough soon after it was established. For some years he acted as deputy coroner for West Surrey.

Mr. Parson took a keen interest in the affairs of the Society of Apothecaries of London. After serving as Junior and Senior Warden he was elected Master in 1902–03 and filled the office with conspicuous success and distinction. Even after vacating this position his interest did not slacken notwithstanding impaired health, and there can be no doubt that he injured himself seriously by insisting on travelling from Godalming to the meetings of the court, however inclement the weather might be. He was highly esteemed by his colleagues at the Hall and was a great favourite with the officials. He was a Fellow of the old Therapeutic Society.

Mr. Parson retired from active practice to all intents and purposes in 1900 and soon afterwards gave up altogether. Nevertheless, he still watched keenly the modern progress of medicine and surgery, both scientific and practical, and was always eager to be informed of and to discuss any new developments, while at the same time clinging tenaciously to the results of his own varied and extensive experience on many points of practice. Unfortunately his health began to give way and some grave acute attacks supervened, immediately threatening his life, but he got over them in a wonderful way owing to his recuperative powers and to the devoted attention and nursing which he received and was able again to proceed in his usual quiet routine. The same family devotion prolonged his life materially, but latterly he was evidently failing and the end came somewhat rapidly, fortunately without suffering.

Mr. Parson was whole-hearted in his devotion to his profession and not only never shirked his duty but gave his entire life for the good of others, often completely neglecting his own health and comfort. Indeed, he may be fitly described as a typical example of the class of high-principled, thoroughly conscientious, kind-hearted, and self-sacrificing country "doctor," to whom the public whom they serve are so deeply indebted. His goodness to the poor cannot be over-estimated, though it was carried out without any display, and much of it was only known to private friends. He was held in high esteem and affection by rich and poor alike. He has left a widow and two daughters to mourn their loss, to whom the deepest sympathy will be accorded by a large circle both within and outside the profession.

The funeral took place at Godalming parish church on Friday, Feb. 12th, amid general manifestations of mourning and regret by the inhabitants. The town was represented by the Mayor, some of the aldermen and councillors, the town clerk, and others, while several local professional colleagues were present, as well as numerous friends from a distance, including representatives of the Society of Apothecaries. The present and late vicar of Godalming took part in the service, which was very impressive, and a large concourse of persons witnessed the interment in the family vault.

GEORGE EDWARD WALKER, F.R.C.S. ENG., L.S.A.,

SENIOR HONORARY SURGEON TO ST. PAUL'S EYE AND EAR HOSPITAL, LIVERPOOL.

Mr. George Edward Walker, whose death at Las Palmas, Grand Canary, on Feb. 15th was announced in our last issue, was born in Wigan in 1839 and was educated at Wigan Grammar School and at Chester. In 1859 he entered University College Hospital, London, and qualified as L.S.A. in 1863 and in the same year as M.R.C.S. Eng., obtaining the Fellowship by examination in 1869.

While in London he was attracted to the study of disease of the eye and worked for some time at the Royal London Ophthalmic Hospital, Moorfields, where he was clinical assistant to Sir William Bowman. On settling in Liverpool in 1870 he began a general surgical practice, but while waiting for a vacancy on the staff of one of the hospitals he took two small rooms in St. Paul's-square

for the gratuitous treatment of the poor suffering from diseases of the eye or ear. The work grew rapidly and soon, with the help of his father-in-law, the late Mr. William Nimmo, and others, the whole house was taken and turned into a public charity under the name of St. Paul's Eye and Ear Hospital. When the next vacancy occurred on the staff of one of the general hospitals he found that as the only candidate holding the Fellowship he was likely to be elected, but that under its rules he would not be allowed to hold two honorary hospital appointments. He was tempted, therefore, to abandon his post at the newly founded and struggling St. Paul's Hospital and to take the appointment at the well-established general hospital. But he refused to desert the committee which had shown its trust in him by founding St. Paul's Hospital and he withdrew his candidature for the general hospital. He was rewarded by seeing St. Paul's Hospital in his 38 years' work there grow from its small beginning into a hospital of 50 beds, with a yearly attendance of nearly 10,000 patients. Other appointments which he held at the time of his death were honorary surgeon to the School for the Indigent Blind and honorary consulting ophthalmic surgeon to the David Lewis Northern Hospital. He was also sometime honorary ophthalmic surgeon to the Royal Albert Edward Infirmary, Wigan, and honorary surgeon to the Hospital for Skin Diseases, Liverpool.

Mr. Walker was always an original thinker, disregarding fashion in surgery he was often in advance of his time. He was, for instance, one of the earliest advocates, if not the first, of the immediate ligature of the common carotid artery in intracranial aneurysm of the internal carotid, and in his book "Essays in Ophthalmology," published in 1879, he recorded a case successfully operated on in 1878. He wrote further on this subject in "Pulsating Exophthalmos" (Transactions of the Ophthalmological Society, 1887), and again in THE LANCET of Jan. 27th, 1894, in an address on Pulsating Exophthalmos, a Plea for Early Ligature, he recorded (with Mr. Chauncy Puzey) three more cases. He devised operations for the release of synechiæ, both anterior and posterior, of the iris, and described the former in an article on the Treatment of Adhesions of the Iris to the Cornea in THE LANCET of Jan. 31st, 1885; but the operation in which he took the greatest pride was that which he invented for corneal ulceration and described under the name of "kerotomy" in an article entitled "On the Treatment of Some of the Graver Inflammations of the Cornea" in the *Liverpool Medico-Chirurgical Journal* for 1889. His operations have stood the test of time and are in daily use in the practice of St. Paul's Hospital. Kerotomy in particular has proved to be a very successful operation in the treatment of corneal inflammation.

Mr. Walker married in 1870 Louise, daughter of Mr. William Nimmo of Birkdale and leaves his widow, two daughters, and four sons, of whom one is in the medical profession, and had been associated with him in practice. A memorial service was held on Feb. 23rd at the Church for the Blind, Liverpool, of which he had been a warden for many years.

ALFRED TEMPLE SPANTON, M.A. CANTAB., L.R.C.S. EDIN., L.S.A.

THE death of Mr. Alfred Temple Spanton of Birkenhead on Feb. 15th was an event of tragic suddenness, for only the day before he had been visiting his patients, although suffering from symptoms of influenza. A very rapid pneumonia resulted in heart failure and we have to offer our respectful sympathy to Mr. W. D. Spanton, a widely known Staffordshire practitioner, on the loss of his son at the age of 33 years. Mr. Alfred Spanton was educated at Cheltenham and Trinity College, Cambridge, where he gained an honours degree in arts in 1897, taking his M.A. five years later. He pursued his medical studies at Addenbrooke's and St. George's Hospitals and qualified L.S.A. Lond. in 1900 and L.R.C.S. Edin. three years ago. He held resident dispensary appointments at Leeds and Manchester, and had been in practice in Birkenhead for about 18 months at the time of his death where he was a universal favourite. He had ingratiated himself especially with his poorer patients, many of whom were represented at his funeral which was conducted at St. James's Cemetery, Birkenhead, on Feb. 18th. Mr. Alfred Spanton had interests outside his professional work, as was evidenced by a paper on "William Hamilton, R.A.," which he contributed recently to an art journal.

WILLIAM NIVEN, M.D. ST. AND., L.R.C.S. EDIN., L.S.A., SURGEON-MAJOR, INDIAN MEDICAL SERVICE (RETIRED).

THE death has just occurred at Woodlands, Ore, Hastings, of Surgeon-Major William Niven who retired from the Indian army in 1881. William Niven was born on Feb. 6th, 1826, and was thus in his eighty-fourth year. He was trained for the medical profession and took the diploma of L.R.C.S. Edin. in 1851. In 1852 he became a Licentiate of the Society of Apothecaries of London and two years later proceeded to the M.D. degree at the University of St. Andrews. He then joined the Indian army and very soon saw active service. In 1856 the Persian Government embarked on aggressive measures against Herat, but after a brief expeditionary campaign, in which General Outram at Bushire and in Khuzistan carried all before him, a treaty of peace was signed in Paris in 1857. Surgeon-Major Niven took part in that expeditionary campaign, for which he was awarded a medal and clasp. Some years later he held the position of medical superintendent of the Government lunatic asylum at Bombay and retired, as has been stated, in 1881. He had resided at Hastings permanently during the past four years.

DEATHS OF EMINENT FOREIGN MEDICAL MEN.—The deaths of the following eminent foreign medical men are announced:—Dr. Josef Daimer, principal medical adviser to the Austrian Minister of the Interior and author of an important manual of sanitary law.—Dr. Kuhbächer, sanitary councillor of Cologne.—Surgeon-General Schulte of Rostock.

Medical News.

SOCIETY OF APOTHECARIES OF LONDON.—The Gillson scholarship in Pathology, 1909, has been awarded to Mr. Philip Noel Panton, M.A., M.B., B.C. Camb., M.R.C.S. Eng., L.R.C.P. Lond., of the University of Cambridge and St. Thomas's Hospital.—At examinations held recently the following candidates passed in the subjects indicated:—

Surgery.—W. C. D'eath, Charing Cross Hospital.
Medicine.—N. B. Benjafield (Sections I. and II.) and J. Bramley-Moore (Section I.), University College Hospital; and J. H. Clarke (Sections I. and II.), St. Mary's Hospital.
Midwifery.—J. H. Clarke, St. Mary's Hospital; M. Graves, London Hospital; and H. V. Humphry, Westminster Hospital.

UNIVERSITY OF LONDON.—At the Preliminary Scientific Examination held in January the following candidates were successful:—

PART I.—INORGANIC CHEMISTRY, EXPERIMENTAL PHYSICS, AND BIOLOGY.

Inorganic Chemistry and Experimental Physics.—*Patrick Arthur Dargan, King's College; *Frank Rex Fletcher and *Septimus Alexander Forbes, London Hospital; *Humphrey Leonard G. Foxell, University College; Leonard Kingdon and *Eric Delafield Lindow, King's College; *Helena Rosa Lowenfeld, Ladies' College, Cheltenham, and London (Royal Free Hospital) School of Medicine for Women; *Arthur G. Maitland-Jones, Taunton School and London Hospital; Allan Noel Minns, private study; John Ernest Pearce, Clifton College and Brighton Technical College; *Arthur Joseph Eagleton Smith, Guy's Hospital; *Harold Vickers, St. Mary's Hospital; and *John Glen Wardrop, University College.
Inorganic Chemistry and Biology.—‡Percy Vernon Davies, University College, Cardiff; Stanley Sextus B. Harrison, Guy's Hospital; ‡Arthur Maddock Jones, Epsom College; Desmond Manus MacManus, Guy's Hospital; ‡Refna Mallet and ‡Martha Patterson, London (Royal Free Hospital) School of Medicine for Women; ‡Frederick John Rayner Simpson, King's College; and ‡Herald Joseph Wallace, University College.
Experimental Physics and Biology.—Frederic Vivian Bevan-Brown, Canterbury College, New Zealand; †Richard Challoner Cobbe Clay, Epsom and King's Colleges; Thomas Williams David, University College, Cardiff; and William Llewellyn Gwyn Davies, †Frederick Henry Dodd, †William Leonard Eliot Reynolds, †Leslie Muir Smith, Guy's Hospital.
Inorganic Chemistry only.—‡*Robert Maitland Beath, Queen's College, Belfast; ‡*Kenneth Biggs, London Hospital and private study; *Ursula Poussett Blackwell and Gwendolyn Margaret Burns, London (Royal Free Hospital) School of Medicine for Women; ‡*Alice Hope Christie, University College, Bristol; Ernest James Coombe, Royal Albert Memorial, University College, Exeter; ‡*Pattie Ruth Elliott, University College, Nottingham, and London (Royal Free Hospital) School of Medicine for Women; *Harry Hope Fisk, St. Mary's Hospital; ‡*Georg Arnold Gassmann, London Hospital; ‡*Edward Alexander M. J. Goldie, University College; John William Heekes, Charing Cross Hospital; ‡*Frederick William Kealey, St. Bartholomew's Hospital; ‡*Hector Smith, Charing

Cross Hospital; ‡*Trevor Richard Snelling, London Hospital; ‡Bertram Noel Walmsley, University College, Bristol; †*John Richard M. Whigham, Wetminster City School and St. Mary's Hospital; ‡*John Douglas Wilkinson, St. Thomas's Hospital; †*Walton Ronald Wilson, Epsom College; and ‡*William Pridham Wippell, St. Bartholomew's Hospital.

Experimental Physics only.—†*W. P. Charles Abeyedeera, University College; †*George Maclean Campbell, University College, Bristol; †*Sydney Colin W. Iredale, St. Bartholomew's Hospital; †*Rustam Merwan Kharegat, University College; †*William Leslie, Charing Cross Hospital; *Reginald Walter Little, University College, Cardiff; Bernard Leo St. Clair Miller, Victoria College; †*Francis Charles Robbs, St. Mary's Hospital; †Stanley Hugh Robinson, Guy's Hospital; *Thomas Windover Robinson, London Hospital; †*John Alfred Ryle, Guy's Hospital; *Gerald Davenant Shann, King's College; †*Herman Crowther Viehoff, University of Liverpool; †*Ernest Haines Walker and †*John Delafosse Wilkinson, St. Thomas's Hospital; and †*Richard Williams, London Hospital and private study.

Biology only.—†‡Margaret Janet Armstrong, London (Royal Free Hospital) School of Medicine for Women; †‡Francis Eldon Daunt, St. Thomas's Hospital; John Kenyon Davies, University College, Cardiff; †‡George Dunluce Eccles and †‡Henry William Evans, Guy's Hospital; †‡Herbert Thomas Evans, Birkbeck College, University Tutorial College, and private study; †‡Julian Trevor Eyre Evans, St. Paul's and St. Mary's Schools; Frank Brayshaw Gilhespy, University College; †‡Daniel Thomas Harris, private study; †‡Richard Orthin H. Jones, private tuition; Gladys Matthews, Ladies' College, Cheltenham; †‡Richard Amyas Preston, University of Leeds and private study; †‡Leslie Norman Reece, Canterbury College, New Zealand, and St. Thomas's Hospital; Eric Arnold Scott, University College; †‡Arthur Roland Turtle, London Hospital; †‡Frederick Edward Saxby Willis, St. Bartholomew's Hospital; and Siong Yew Wong, St. Thomas's Hospital.

* Already passed in Biology.
† Already passed in Inorganic Chemistry.
‡ Already passed in Experimental Physics.

PART II.—ORGANIC CHEMISTRY.

Pass-list.—William Stuart Armitage, St. Mary's Hospital; Walter Martin Ash, London Hospital; Leonard Barron Baird, Victoria University of Manchester; John Corfield Pitter Bayley, Manchester Technical School and private study; Frank Percy Bennett, St. Mary's Hospital; Thomas Izod Bennett, Guy's Hospital; Mabel Kate Bishop, London (Royal Free Hospital) School of Medicine for Women; George James Bowen, University College, Cardiff; Oscar Newrick William Brown, King's College and Westminster Hospital; Frederick William Theodore Clemens, University College, Bristol; Rolf Creasy, Guy's Hospital; Lionel Gordon Crossman, University College, Cardiff; Jules Maurice Curé, Royal College of Mauritius and St. Bartholomew's Hospital; John Lloyd Davies, University College, Cardiff; Richard Denis Davy, London Hospital; Joseph de Silva, St. Mary's Hospital; George Rowland Dobrashian, University College; Victor William Draper, Huddersfield Technical College and King's College; Philip Vanner Early, University College; Andrew Royston Elliott, Dulwich College and private study; Walter Armstrong Elliott, private study; Thomas Leslie Ellis, University College, Cardiff; Gertrude May Flumerfelt, London (Royal Free Hospital) School of Medicine for Women; Cyril Ernest Ambrose Goddard and Aubrey Goodwin, University College; Olive Gertrude Mary Gray, London (Royal Free Hospital) School of Medicine for Women; Cyril James Anthony Griffin, University College; Alfred Ernest Hallinan, Charing Cross Hospital; David Marcus Hanson, University College; George Murray Helron, London Hospital; Edward Sancton Walls Hirsch, St. Mary's Hospital; Melville Hocken, London Hospital; Thomas Herbert Holroyd, University of Birmingham; George Battersby Jameson, Victoria University of Manchester and private tuition; Charlotte Grace Judge, London (Royal Free Hospital) School of Medicine for Women; Skene Keith, Guy's Hospital; Thomas Pomfret Kilner, Victoria University of Manchester; William Edward Kingdon, University of Sheffield; Dorothy Cochrane Logan and Charles Jennings Marshall, University College, Cardiff; John Pearson Mathews, University of Sheffield; Victor Ewings Negus, King's College; S. George Papadopoulos, St. Bartholomew's Hospital; Cecil Joseph Herbert Pearson, London Hospital; Gwilym Rhys Pennant, University College, Cardiff; John Frederick Gwyther Richards, Victoria College, Wellington, New Zealand; Aneurin Evan Roberts, London Hospital; William Robinson, Guy's Hospital; Arthur Richard Sharrod, London Hospital; Arthur Leonard Shearwood, Guy's Hospital; Winifred Christian Squires, London (Royal Free Hospital) School of Medicine for Women; Charles Hamblen Thomas, St. Bartholomew's Hospital; Ursula Thompson, University College, Cardiff; Charles Edgar Thornton, Middlesex Hospital; Aubrey John Colby Tingey, University of Liverpool; Joseph Alexander Tsoi-A-Sue, London Hospital; James Vaughan-James, University College, Cardiff; Honoria Josephine Wallace, London (Royal Free Hospital) School of Medicine for Women and private tuition; Francis Clark Watson, University of Leeds; Harold Webb, Guy's Hospital; Percy Whitehead, King's College; Edgar William Whiting, St. Bartholomew's Hospital; Cecil Leonard Williams, Plymouth Technical School and St. Bartholomew's Hospital; and Charles Harold Wilson, University of Sheffield.

N.B.—This list, published for the convenience of candidates, is issued subject to its approval by the Senate.

ROYAL COLLEGE OF SURGEONS IN IRELAND.

The following candidates have passed the Primary Examination for the Fellowship:—

L. S. Machado, C. J. Bourke, A. H. Croly, T. Dowzer, J. T. Duncan, J. FitzGerald, J. Geraty, H. C. Gilmore, C. J. Kelly, P. H. M'Donough, P. J. Mockler, J. K. O'Byrne, T. F. O'Donnell, L. W. Roberts, C. D. K. Seaver, H. H. K. Sparrow, H. R. Tighe, and V. Wallace.

The following candidates have passed the Final Examination for the Fellowship:—

T. J. Brooke-Kelly, C. L. G. Chapman, J. F. Devane, C. M. Goodbody, J. B. Hanafin, J. W. Rutherford, and O. Smithson.

The following candidates have passed the Primary Dental Examination:—

Ernest Reginald Black, Robert Spencer Heaton Drabble, Louis Stanislaus O'Hare, Justin Marius Sherin, and Oscar Trigge.

The following candidates have passed the Final Dental Examination:—

William Stewart Johnston, Sydney Richard Macnamara, Louis Stanislaus O'Hare, and Israel Scher.

FOREIGN UNIVERSITY INTELLIGENCE.

Breslau: The chair of Hygiene vacated by Professor Flügge on his migration to Berlin has been offered to Professor Richard Pfeiffer of Königsberg.—*Florence:* Dr. Giusseppe Luigui Basso has been recognised as *privat-docent* of Midwifery and Gynæcology.—*Giessen:* Dr. Hohlweg has been recognised as *privat-docent* of Medicine.—*Jena:* Dr. Wilhelm Müller, Professor of Pathological Anatomy, who is 77 years of age, and Dr. Jacobsthal, Director of the University Surgical Policlinic, are retiring at the close of the current winter session.—*Marburg:* Dr. Oskar Bruns has been recognised as *privat-docent* of Medicine.—*Reims:* M. Bottu has been appointed Professor of Chemistry and Toxicology.

METROPOLITAN POLICE SURGEONS' ASSOCIATION.

The annual meeting of this association was held at Frascati's Restaurant on Feb. 17th. Mr. A. F. L. Dorin, who has been one of the honorary secretaries since 1893, was elected president for the coming year. Dr. G. N. Henry, the senior vice-president, and Dr. C. O. Fowler were nominated as honorary secretaries. Dr. C. P. Gallie received the thanks of all the members for the way in which he had fulfilled his arduous duties as honorary treasurer and was unanimously asked to continue in that office. Mr. V. A. Jaynes was selected as vice-president and the four vacancies on the council were filled up by the election of Dr. F. G. Crookshank, Mr. Peter Cooper, Mr. Bertram Goddard, and Dr. Martindale C. Ward. In moving the adoption of the report of the council for the past year the chairman pointed out that out of a total of 172 divisional surgeons 154 were members of the association, and in view of the numerous advantages which it had obtained for its members, including the alteration in the hours of night police station casualty visits and the settlement of the question of fees for club certificates for policemen, &c., it was to be hoped that those few who have not yet joined would shortly do so. The meeting was followed by the annual dinner, which was under the chairmanship of the President (Mr. F. W. Spurgin), who was supported by Mr. Curtis Bennett, one of the Metropolitan Police magistrates; Sir Alexander Bruce, Assistant Commissioner of the Metropolitan Police; Mr. Clinton T. Dent, the chief surgeon; and Mr. Schröder, deputy coroner for the London Central District. After the usual loyal toasts had been honoured Mr. Schröder proposed "The Metropolitan Police Surgeons' Association." He remarked on the relationship between coroners and divisional surgeons and paid a tribute to the great help that he had always received from them in the many "quests" which he, as deputy coroner, had held. He further referred to the Departmental Committee of the Home Office, which was now inquiring into the law and practice of the coroners' courts, particularly regarding the appointment of special experts to perform necropsies and to give evidence in special cases, and expressed his opinion that it would be an advantage if the divisional surgeons were appointed to act in such cases. He instanced a case which came before him in 1879, when the evidence of the chairman had been of material help. The senior secretary, in replying, laid especial stress on this subject, remarking that the divisional surgeons were men appointed by the Secretary of State on the recommendation of the chief surgeon, endorsed and submitted by the commissioners. Under the Police Orders, they had to attend the post-mortem examinations and to act as referees, in coöperation with the attending practitioner, in all cases of supposed homicide. Moreover, they were familiar with legal proceedings and accustomed to give evidence and so better qualified to act as investigators than gentlemen from afar who would not necessarily have any acquaintance with the circumstances and conditions of the case. Mr. Dent gave the toast of "The

Commissioners," which was replied to by Sir Alexander Bruce. Mr. H. Bott proposed "The Chief Surgeon," and Mr. W. A. Grogono "The Guests," to which Mr. Curtis Bennett made a most entertaining reply, giving some interesting anecdotes of his experience as a magistrate. The dinner concluded with "The Health of the President and Officers of the Association," to which the chairman suitably responded. An enjoyable concert programme was provided by the "Queer Quakers," under the direction of Miss Lily Pritchard, assisted by Mr. Charles Bulwar.

LITERARY INTELLIGENCE.—The lecturer in embryology in the University of Oxford, Mr. J. W. Jenkinson, M.A., D.Sc., has written a volume on "Experimental Embryology," which the Oxford University Press will publish next month. The volume, which is copiously illustrated, is concerned with the origin of form, and in particular with its origin in the individual.

A BRIGHTON DISPENSARY CENTENARY.—The Brighton, Hove, and Preston Dispensary is in its centenary year. It was founded in the year 1809 "to administer to the labouring classes advice and medicine gratis and to promote vaccination," in which direction it has done, and is doing, a most excellent work. In connexion with it there is also a Samaritan Fund which provides food and necessaries for very poor persons. To mark the centenary a special fund is being raised for the extension of the western branch in the town of Hove for which £2150 are asked, and £2500 to increase the endowment of the Samaritan Fund.

THE ROYAL SANITARY INSTITUTE.—The Henry Saxon Snell prize which is awarded by the council of this institute every three years is offered in the present year for an essay on "The Principles of Heating and Ventilating Public Buildings, with Descriptive Details and Illustrations of the Best System." The prize consists of £50 and the institute's medal. The essay must consist of not more than 5000 words and must be illustrated. Two competitors "of different professions or crafts" may collaborate in one essay. All essays must be delivered on or before August 31st, addressed to the secretary of the Royal Sanitary Institute, 90, Buckingham Palace-road, S.W., from whom further particulars may be obtained.

MIDWIVES ACT COMMITTEE. — The fourth meeting of the departmental committee, appointed by the Lord President of the Council, to consider the working of the Midwives Act, was held on Feb. 17th at the Privy Council office, Mr. Almeric W. FitzRoy presiding. The following witnesses attended and gave evidence: Miss Wilson, President of the Incorporated Midwives Institute; Mr. F. B. Harris, Deputy Town Clerk of Nottingham, on behalf of the Association of Municipal Corporations; Mr. Joseph Brown, of Dewsbury, on behalf of the Association of Poor Law Unions in England and Wales; and Mrs. Wallace Bruce, on behalf of the Association for Promoting the Training and Supply of Midwives.

MEDICAL INSPECTION OF SCHOOL CHILDREN: SCHOOL INSPECTION IN WEST SUSSEX.—At the first meeting of the education committee of West Sussex this year on Feb. 11th a return was submitted showing the number of physically defective school children who have received remedial treatment as a result of their inspection by the school medical officer in 1908. The number of schools inspected was 192, representing 6681 children, of whom no fewer than 1804 were found defective, a result taken to confirm the necessity of compulsory inspection. The cases treated in hospital numbered 119, and those treated by private practitioners 174. It was necessary to clean the heads of 190 children; 99 were treated in hospital for adenoids and enlarged tonsils; and 57 were supplied with glasses, mostly by private prescription. In 52 cases the parents declined to take any steps for their treatment.

THE BELGIAN CONGO MEDICAL SERVICE.—The Belgian Colonial Minister has issued a notice offering posts as second-class surgeons to young medical men willing to go out to the Congo. Their duties will be to combat the ravages of the sleeping sickness and to take medical charge of Europeans and natives. Those selected will have to undergo a three months' course of study at the Brussels School of Tropical Medicine, during which time they will be allowed eight francs per diem. The pay in the Congo is 7500 francs per annum in addition to board and lodging allowances. No mention is made in the notice published in *La Belgique Médicale* of the amount of furlough which will be granted, nor yet of sick pay or pensions.

AT Worthing on Feb. 17th Mr. H. J. Milbank Milbank-Smith, M.R.C.S. Eng., L.R.C.P. Lond., was elected a member of the town council.

MEDICAL MAGISTRATE.—Mr. William Gostwycke Sargent, L.S.A. Lond., has been placed on the commission of the peace for the county of Monmouth.

THE MEDICAL CHARITIES OF BRISTOL.—During the past 26 years the employees of Messrs. E. and A. Robinson of Bristol have voluntarily contributed £5145 to the local medical charities.

CENTENARIANS.—Mr. Thomas Williams, who had recently celebrated the hundredth anniversary of his birthday, died at Whitmoor, Cornwall, on Feb. 16th. Mr. David Hughes died last week at Garnwen, near Llanelly, aged 100 years.

PAIGNTON (DEVON) COTTAGE HOSPITAL.—At the annual meeting of the subscribers to the Paignton Cottage Hospital, held on Feb. 19th, it was stated that the year 1908 was commenced with an adverse balance of £385 but closed with a balance in hand of £129.

THE BRISTOL UNIVERSITY FUND. — Mr. E. Chaning Wills has contributed £10,000 to the fund for the establishment of a University for Bristol and the West of England. This makes the total subscriptions up to the present amount to £200,000, irrespectively of the existing buildings, the value of which is estimated at about £55,000.

DONATIONS AND BEQUESTS.—In celebration of his golden wedding Mr. R. Thomas, who is the head of the largest tin-plate manufacturing firm in Wales, has presented 1000 guineas each to the Cardiff, Swansea, Newport, and Llanelly Hospitals, and £250 to the Ross Hospital.—Mrs. Nosworthy of Dawlish has given £1000 to the funds of the West of England Eye Infirmary, Exeter.

Sir Rubert Boyce has left Southampton in the R.M.S.P. *Tagus* and is due to arrive at Barbados on March 2nd, his object being to visit the West Indies for the purpose of looking into the present methods of dealing with sickness in those colonies, and recommending what reforms, if any, can be introduced with a view to promoting the physical welfare in the Carribbean Islands.

PRESENTATION TO MR. E. M. GRACE.—When Mr. E. M. Grace, L.R.C.P. Edin., M.R.C.S. Eng., resigned the post of secretary of the Gloucestershire County Cricket Club, a post which he had held for nearly 40 years, it was determined to present him with a testimonial. A committee has been appointed for that purpose, with the Duke of Beaufort as president and Mr. J. W. Arrowsmith as honorary secretary and treasurer. It has been decided to invite subscriptions not merely from Gloucestershire people but from all who are interested in cricket.

CHELSEA CLINICAL SOCIETY.—The annual clinical debate, the subject of which this year will be the Diagnosis and Treatment of Tuberculous Glands in the Neck, will be held at the Chelsea Dispensary, Manor-street, King's-road, S.W., on Tuesday, March 9th, and Tuesday, March 16th, at 8.30 P.M. The following speakers will open the debate: On March 9th Dr. L. C. Peel Ritchie will speak on the Differential Diagnosis and Inoculation Treatment of Tuberculous Glands in the Neck, and Dr. A. Howard Pirie on the Treatment of Tuberculous Glands by X Rays, with lantern demonstrations and cases. On March 16th Dr. A. Latham will speak on the Medical Treatment of Tuberculous Glands, and Mr. H. Stansfield Collier, on the Present Position of Operations in Relation to the Treatment of Tuberculosis of the Cervical Glands. A general discussion will follow on each evening. These meetings are open to all members of the medical profession. The Chelsea Dispensary is close to the Chelsea town hall.

Parliamentary Intelligence.

NOTES ON CURRENT TOPICS.

The New Session of Parliament.

FOR the first days of the new session of Parliament the attention of both Houses has been exclusively bestowed on important political topics. Indeed, the debates which have arisen on the address in reply to the Speech from the Throne have this year tended to assume more than usual of what is known as a "full-dress" character. Parliament sat in December, and as Members have had recent opportunities of addressing inquiries on matters of administration to Ministers, there has not been so great a rush as usual to crowd the notice paper with questions. The ballot for precedence for private Members' Bills has taken place. The Daylight Saving Bill has the first place, but as its novelty has gone it is unlikely to contribute much to Parliamentary gaiety this year. None of the private Members' Bills obtaining a place in the ballot have a medical interest. A Bill under the charge of Sir LUKE WHITE to dispense with the compulsory viewing of bodies by juries at coroners' inquests has the twenty-fifth place. One unfamiliar feature marked the debate on the address in the House of Commons. The public galleries, usually crowded with interested listeners on the first nights of a session, were absolutely deserted. They are not to be reopened until a Bill has been passed making possible the imposition of a sentence of imprisonment on persons who disturb the House with demonstrations.

The Royal Commission on the Poor-laws.

Much attention has been bestowed by Members of Parliament on the voluminous report of the Royal Commission on the Poor-laws. There is nothing but praise for the zeal and patience of the members of the Commission. Their work may not inaptly be described as marking an epoch in the history of the Poor-law. Still time will be required before the recommendations are mastered in all their bearings. Of course, legislation will be needed to give effect to any change in the directions indicated in the report. Only a Government can undertake it. Members of Parliament are aware that legislation on such controversial topics as are dealt with in the report is difficult to proceed with. Old Parliamentary hands also know that it is no easy matter to obtain a tolerable amount of agreement on the finance, the details of administration, the relation of the local authority to the central department in a wide and complicated measure. The task of a Government to translate into legislation the materials which the Royal Commission has placed at its disposal is recognised at Westminster as no light undertaking.

The Housing and Town Planning Bill.

Mr. BURNS has lost no time in reintroducing into the House of Commons the Housing and Town Planning Bill of last session. He formally presented it for first reading on Wednesday, Feb. 17th. Its text was issued on Friday and it is the intention of the Government to pass the measure through its various stages in the House of Commons without much loss of time, so that the Lords may have ample opportunity to examine its terms before the summer pressure of legislation arrives. In pressing it forward with rapidity the Government will have the justification that it is substantially in the form in which the Bill of last session left a Standing Committee of the House of Commons. Some alterations have been made to meet promises made in committee.

There are three parts of the Bill. One part deals with the housing of the working classes, another with town planning, and the third makes further provision with respect to the appointment and duties of county medical officers of health and also provides for the establishment of public health and housing committees of county councils. Included in the housing part of the Bill is a clause defining the duty of local authorities with regard to closing dwelling-houses unfit for human habitation. The duty is imposed on them to cause to be made from time to time an inspection of their district for the purpose of ascertaining whether any dwelling-house therein is in a state so dangerous or injurious to health as to be unfit for human habitation. If on the representation of the medical officer of health or of any officer of the authority, or on information given, it appears to them that any dwelling-house is in such a state, it becomes their duty to make an order prohibiting the use of the dwelling-house for human habitation until in their judgment it is rendered habitable. A new subsection embodying important hygienic proposals is embodied in the clause. Quoted *in extenso* it runs thus:—

"A room habitually used as a sleeping place, the surface of the floor of which is more than three feet below the surface of the part of the street adjoining or nearest to the room, shall for the purposes of this section be deemed to be so dangerous or injurious to health as to be unfit for human habitation, if the room either (*a*) is not sufficiently protected against dampness, effluvia, or exhalation; or (*b*) is not sufficiently ventilated; or (*c*) is not in every part thereof at least seven feet in height from floor to ceiling; or (*d*) is not, to the extent of one foot at least in height, above the level of the surface of the part of the street adjoining or nearest to the room; or (*e*) has not one or more windows opening directly into the external air, with a total area clear of the sash frames equal to at least one-tenth of the floor area of the room, and so constructed that one-half at least of each window of the room can be opened, the opening in each case extending to the top of the window; or (*f*) is not provided along the entire frontage thereof with an open area properly paved, at least four feet wide in every part thereof: Provided that in the area there may be placed steps necessary for access to the room, and over and across the area there may be steps necessary for access to any buildings above the room, if the steps are so placed in each case as not to be over or across any external window."

By Clause 67 the duty is laid on every county council to appoint a medical officer of health, but for his removal the consent of the Local Government Board is required. It is laid down in precise terms that a medical officer of health of a county shall not be appointed for a limited period only. County councils may, with the sanction of the Local Government Board, make temporary arrangement for the performance of all or any of the duties of the medical officer of health of the county. Subject to the terms of his appointment, the temporary holder of this office will enjoy the powers, duties, and liabilities of the medical officer of health of the county. Restrictions are placed on medical officers of health with regard to private practice and the holding of other public appointments without the express written consent of the Local Government Board.

Means are taken to establish a closer relationship between the district council and the county council in matters relating to public health. A duty is imposed on the clerk and the medical officer of health of a district council to furnish information to the medical officer of the county which the latter may reasonably require for the purpose of his duties. This part of the Bill, however, is inapplicable to Scotland or to the Administrative County of London. A further provision makes obligatory on county councils the establishment of a public health and housing committee.

These notes touch a few salient points in the Housing and Town Planning Bill. The measure is extremely complicated and the discussion in Committee last year disclosed the existence of considerable opposition on some points. It would be premature to assume that it has taken anything like a final shape. Shortly after it was reintroduced notice was given of an amendment to the motion for the second reading raising the very controversial subject of the taxation of land values. Such amendments, if in order, have the effect of delaying the progress of a Bill, as they raise discussion.

Milk Legislation.

The President of the Local Government Board has indicated his intention of introducing a Bill dealing with milk-supply early in the session. It was intended to introduce it last year, but the exigencies of Parliamentary time placed an obstacle in the way Several Members representing agricultural constituencies are watching the advent of the measure with a special view to safeguard the interests of their constituents. On several occasions during the debate on the Address appeals have been made to Mr. BURNS not to draft it in such a manner as to hamper unduly the dairy farmer. Concurrently comes the announcement that the Government contemplates the introduction of a Dairies Bill for Scotland. The subject of milk-supply is also dealt with in the London County Council (General Powers) Bill. This is private Bill which has not yet obtained a second reading. At least six members are to offer opposition to the terms of the milk clauses and they intend to move an instruction to the Select Committee to delete them from the Bill.

Private Members' Bills.

At the beginning of each session private Members avail themselves fully of the opportunity of presenting Bills on subjects in which they are interested. The Bills are then read a first time and printed, but few of them make further progress. Amongst the Bills introduced this year is one to prohibit experiments on dogs. It is under the care of Sir FREDERICK BANBURY. Mr. CLAUDE HAY has also introduced a Bill to prohibit the use of hop substitutes in brewing.

HOUSE OF COMMONS.

THURSDAY, FEB. 18TH.

Licences under the Pharmacy Act.

Major COATES asked the President of the Local Government Board when the regulations in reference to the granting of licences under the Pharmacy Act, 1908, were to be issued.—Mr. BURNS replied: Regulations under the Act are made by an Order in Council. Notice of the intention to submit to His Majesty in Council the draft of an Order making such regulations was published in the *London Gazette* on Feb. 16th, and after the expiration of 40 days from that date the draft of the Order will be submitted to His Majesty in Council accordingly.

Kinematograph Performances and Fires.

Mr. GODFREY BARING asked the Secretary of State for the Home Department whether his attention had been called to the number of fires recently caused at places of entertainment owing to the dangers incident to kinematograph performances, and whether he would consider the desirability of introducing legislation to regulate and control these performances in the interests of public safety.—Mr. GLADSTONE replied: I am aware of the accidents that have occurred of late, and I have had a Bill dealing with the subject drafted which I hope to introduce at an early date.

Medical Relief and Old Age Pensions.

Mr. HODGE asked the Chancellor of the Exchequer whether his attention had been called to the evidence of an old age pensioner, given at an inquest on the body of his wife, held before the coroner in Hammersmith recently, that he did not call in the parish medical officer for the reason that such act would have stopped the payment of his old age pension; and whether it was his intention to amend the Old Age Pensions Act so as to prevent a similar occurrence.—Mr. LLOYD GEORGE furnished the following written answer: My attention has not been called to this case. If, however, the facts are as stated, the old age pensioner in question would appear to have acted under a misapprehension, since under Section 3 (1) (a) of the Old Age Pensions Act any medical or surgical assistance (including food or comforts) supplied by or on the recommendation of a medical officer is not to be considered as poor relief for the purposes of the provision which makes the receipt of poor relief a disqualification under the Act.

MONDAY, FEB. 22ND.

Milk Legislation.

Mr. COURTHOPE asked the President of the Local Government Board when the Milk Bill would be introduced.—Mr. BURNS replied: I hope to introduce it early in the session but I cannot at present fix a date.

Mr. GULLAND asked the Lord Advocate whether the Government intended to introduce this session a Bill dealing with dairies and milk-supply in Scotland.—Mr. URE answered: The Bill introduced last session by my honourable friend has materially furthered the consideration of this subject and the Government intends to introduce a Dairies Bill for Scotland this session.

Poor-law Reform in Ireland.

Answering Captain CRAIG, Mr. ASQUITH (the Prime Minister) said: It is true that early last year my right honourable friend the Chief Secretary to the Lord Lieutenant expressed the hope that he would be able to introduce this session a Poor-law Reform Bill for Ireland. But he subsequently suggested that the whole question of Poor-law reform in the United Kingdom generally would have to be considered when the Royal Commission had reported. The report of the Royal Commission, which has now been issued, intimates that a separate report will explain in detail the application of the suggested reforms to Ireland. Until that report has been received and considered in conjunction with the main report it will not be possible to say whether separate legislation in regard to Ireland will be necessary or desirable. I may add, however, that supporters of Poor-law reform in Ireland need have no apprehension that the recommendations of the Viceregal Commission will be ignored.

The Grants to District Lunatic Asylums in Ireland.

Mr. LONSDALE asked the Chief Secretary to the Lord Lieutenant for Ireland whether he was aware that the capitation grant-in-aid to district lunatic asylums in Ireland was fixed at 4*s.* per head on the assumption that it meant half the cost of maintenance of each patient; whether he was aware that since this arrangement was made all kinds of provisions had become much dearer and large capital charges had had to be incurred to accommodate the great increase in patients, rendering the total average cost per head much in excess of the former figure; and whether, in these circumstances, it was intended to increase the grant-in-aid so as to restore the balance between imperial and local expenditure upon this service.—Mr. BIRRELL said in reply: The capitation grant, when fixed in 1875 at 4*s.* a week was, I understand, intended to represent approximately half the cost of maintenance. The expenditure on buildings and other capital charges were never taken into consideration in calculating the average cost for the purposes of the capitation grant. I am informed that the average cost of maintenance is now considerably less than it was in 1875. The grant of 4*s.* per head is fixed by statute and I am unable to hold out any hope of legislation to increase the amount.

The Treatment of the Feeble-minded.

Sir GEORGE KEKEWICH asked the Secretary of State for the Home Department whether he would introduce a measure with regard to feeble-minded children and young persons guilty of offences.—Mr. GLADSTONE replied: The question of legislation on the report of the Royal Commission on the Feeble-minded must be subject to Parliamentary exigencies, but I may point out that section 62 (2) of the Children Act of last session already deals with feeble-minded children and young persons who are guilty of offences.

WEDNESDAY, FEB. 24TH.

Medical Arrangements at Leeds Afforestation Scheme.

Mr. O'GRADY asked the President of the Local Government Board whether he was aware that a man by the name of W. Smith, employed on the Leeds afforestation scheme, died on Nov. 11th, and that the circumstances showed inadequate arrangements in the matter of medical attendance and care in cases of dangerous illness of men employed on the scheme; if so, whether an inquiry would be undertaken with the view of establishing a more efficient medical department at the locality where afforestation was being carried on.—Mr. BURNS replied: I have made inquiry on the subject, and I find that the town council of Leeds has instructed a medical man, Dr. Galloway, that on being notified that any man is ill at the building in which reside the men who are employed on the afforestation scheme he is immediately to attend himself or to send a qualified assistant. Dr. Galloway has also been requested to inform the Poor-law authorities without delay in the event of any disease requiring special attention which cannot conveniently be dealt with in the building. Further, the hut keeper has instructions in case of the illness of any of the men at once to communicate with Dr. Galloway and with the waterworks department. In the case mentioned in the question, the workman was visited by Dr. Galloway, who recommended his removal to the workhouse infirmary. There was some misapprehension as to the arrangements for his removal and he was not in fact removed, but the difficulty is not, I think, likely to arise again. In the circumstances it does not appear to me necessary to take any further action in the matter.

Appointments.

Successful applicants for Vacancies, Secretaries of Public Institutions, and others possessing information suitable for this column, are invited to forward to THE LANCET Office, directed to the Sub-Editor, not later than 9 o'clock on the Thursday morning of each week, such information for gratuitous publication.

BAIN, EDWARD W., M.B., B.S. Lond., F.R.C.S. Eng., has been appointed Assistant Surgeon to the Metropolitan Ear, Nose, and Throat Hospital.

BARRETT, W. B., L.R.C.P. & S. Edin., has been appointed Clinical Assistant to the Samaritan Free Hospital for Women.

COLYER, STANLEY, M.D., B.S. Lond., M.R.C.P. Lond., has been appointed Honorary Medical Officer to the Royal Halifax Infirmary.

DENNE, ARCHIBALD, M.B., Ch.B., has been appointed Clinical Assistant to the Samaritan Free Hospital for Women.

FRITSCH, ISIDOR, M.R.C.S., L.R.C.P., has been appointed Clinical Assistant to the Samaritan Free Hospital for Women.

HAYWARD, M. CECIL, M.D., M.R.C.S., has been appointed Clinical Assistant to the Samaritan Free Hospital for Women.

HOLMES, GORDON, M.D., B.Ch., B.A.O. Dub., has been appointed Assistant Physician to Out-patients at the National Hospital for the Paralysed and Epileptic.

HUDSON, F. H., L.R.C.P. Lond., M.R.C.S., has been appointed Certifying Surgeon under the Factory and Workshop Act for the Lavenham District of the county of Suffolk.

KINGDON, J. R., M.R.C.S., L.R.C.P. Lond., has been appointed Medical Officer of Health to the Lynn Town Council.

MUNRO, DONALD J., M.B. Lond., M.R.C.S., L.R.C.P. Lond., has been appointed Anæsthetist to the Metropolitan Ear, Nose, and Throat Hospital.

MURISON, A. LOGAN, M.R.C.S., L.R.C.P. Lond., has been appointed Assistant Surgeon to the Metropolitan Ear, Nose, and Throat Hospital.

POTTER, J. C., M.D. Edin., has been appointed Surgeon to the Metropolitan Ear, Nose, and Throat Hospital.

VENNING, J. A., M.B., B.C. Cantab., has been appointed Clinical Assistant to the Samaritan Free Hospital for Women.

WILLIAMSON, GEORGE SCOTT, has been appointed Pathologist to the West Riding Asylum, Wakefield.

YOUNG, EDWARD HERBERT, M.D. Durh., D.P.H., has been appointed Medical Officer of Health of Okehampton (Devon).

Vacancies.

For further information regarding each vacancy reference should be made to the advertisement (see Index).

BELGRAVE HOSPITAL FOR CHILDREN, Clapham-road, S.W.—Assistant Surgeon.

BIRMINGHAM EAR AND THROAT HOSPITAL, Edmund-street.—House Surgeon. Salary at rate of £70 per annum, with board, lodging, and washing.

BRADFORD CHILDREN'S HOSPITAL.—House Surgeon. Salary £100 per annum.

BRADFORD ROYAL INFIRMARY.—House Physician. Also Two House Surgeons, unmarried. Salary in each case £100 per annum, with board and residence.

BRIGHTON, ROYAL ALEXANDRA HOSPITAL FOR SICK CHILDREN, Dyke-road.—House Surgeon for six months. Salary at rate of £80 per annum, with board, lodging, and washing.

BRIGHTON, SUSSEX COUNTY HOSPITAL.—Third House Surgeon, unmarried. Salary £50 per annum, with apartments, board, and laundry provided.

BRISTOL ROYAL HOSPITAL FOR SICK CHILDREN AND WOMEN.—House Surgeon. Salary £80 per annum, with board, rooms, and attendance. Also Assistant House Surgeon. Salary £50 per annum, with board, rooms, and attendance.

BRISTOL ROYAL INFIRMARY.—Resident Casualty Officer for six months. Salary at rate of £50 per annum, with board, lodging, and washing.

BRIXTON DISPENSARY, Water-lane, S.W.—Resident Medical Officer, unmarried. Salary £150 per annum, with apartments, attendance, coal, and gas.

BROOKWOOD, NEAR WOKING, SURREY COUNTY LUNATIC ASYLUM.—Third Assistant Medical Officer, unmarried. Salary £150 per annum, with board, lodging, and laundry.

BURSLEM EDUCATION COMMITTEE.—Doctor (female). Salary £200 per annum, rising to £250.

BURY ST. EDMUNDS, WEST SUFFOLK GENERAL HOSPITAL.—Honorary Assistant Medical Officer.

CANCER HOSPITAL, Fulham-road, London, S.W.—First Assistant to the Research Department. Salary £350 per annum. Also House Surgeon. Salary £70 per annum, with board and residence.

CARDIFF, ROYAL HAMADRYAD SEAMEN'S HOSPITAL.—Assistant Medical Officer. Salary £60 per annum and fees.

CARLOW DISTRICT ASYLUM.—Resident Medical Superintendent. Salary £350 per annum, and allowances.

CHELSEA HOSPITAL FOR WOMEN, Fulham-road, S.W.—Surgeon to Out-patients.

CHELTENHAM GENERAL HOSPITAL.—House Surgeon, unmarried. Salary £65 per annum, with board and lodging.

CHESTER, CHESHIRE COUNTY COUNCIL.—Medical Officer of Health. Salary £750 per annum, with expenses.

CROYDON BOROUGH HOSPITAL.—Assistant Resident Medical Officer Salary £120 per annum, with board, lodging, and washing.

EAST LONDON HOSPITAL FOR CHILDREN AND DISPENSARY FOR WOMEN, Shadwell, E.—Medical Officer to the Casualty Department for six months. Salary at rate of £100 per annum, with luncheon and tea.

EXETER, WONFORD HOUSE HOSPITAL FOR THE INSANE.—Medical Superintendent.

HEMEL HEMPSTEAD, WEST HERTS HOSPITAL.—House Surgeon. Salary £100 per annum, with rooms, board, and washing.

HÔPITAL FRANÇAIS, 172, Shaftesbury-avenue, W.C.—Junior Resident Medical Officer, unmarried, for six months. Salary at rate of £50 per annum, with board.

HOSPITAL FOR CONSUMPTION AND DISEASES OF THE CHEST, Brompton, S.W.—Assistant Physician.

KENT AND CANTERBURY HOSPITAL.—House Surgeon, unmarried. Salary £90 per annum, with board and lodging.

LIVERPOOL INFIRMARY FOR CHILDREN.—Resident Medical Officer for six months. Salary £30, with board and lodging.

LONDON TEMPERANCE HOSPITAL.—Assistant Resident Medical Officer for six months. Salary at rate of 50 guineas per annum, with board and residence.

LOCHGILPHEAD, ARGYLE AND BUTE ASYLUM.—Assistant Medical Officer, unmarried. Salary £160 per annum, with board, apartments, and laundry.

MANCHESTER, CRUMPSALL WORKHOUSE.—Assistant Medical Officer, unmarried. Salary £140 per annum, with apartments, fire, light, washing, and attendance.

MANCHESTER ROYAL INFIRMARY, CONVALESCENT HOSPITAL, Cheadle.—Assistant Medical Officer, unmarried, for six months. Salary at rate of £80 per annum, with board and residence.

MARGATE, ROYAL SEA BATHING HOSPITAL.—Honorary Visiting Surgeon.

METROPOLITAN HOSPITAL, Kingsland-road, N.E.—House Physician, House Surgeon, Assistant House Physician, and Assistant House Surgeon, all for six months. Salary of two former at rate of £40 per annum, and of two latter at rate of £20 per annum.

NORWICH, NORFOLK AND NORWICH HOSPITAL.—House Surgeon, unmarried. Salary £80 per annum, with board, lodging, and washing. Also Assistant House Surgeon for six months. Salary £20, with board, lodging, and washing. Also Assistant Surgeon.

NOTTS EDUCATION COMMITTEE.—Assistant School Medical Officer for three months. Salary at rate of £250 per annum and travelling expenses.

PORTSMOUTH WORKHOUSE, INFIRMARY, AND CHILDREN'S HOME.—First and Second Assistant Resident Medical Officers. Salary of former at rate of £120 per annum, and of latter at rate of £100 per annum, with apartments, rations, and all other allowances.

QUEEN CHARLOTTE'S LYING-IN HOSPITAL, Marylebone-road, N.W.—Pathologist and Registrar. Salary at rate of £80 per annum.

QUEEN'S HOSPITAL FOR CHILDREN, Hackney-road, Bethnal Green, E.—Assistant Resident Medical Officer. Salary £75 per annum, with board, residence, and washing. Also Assistant Physician.

RAINHILL, NEAR LIVERPOOL, COUNTY ASYLUM.—Assistant Medical Officer, unmarried. Salary £150 per annum, rising to £250, with apartments, board, attendance, and washing.

RHONDDA URBAN DISTRICT COUNCIL.—Assistant Medical Officer of Health. Salary £250 per annum, rising to £350.

ROSS-SHIRE, PARISH OF RESOLIS AND DISTRICT.—Resident Medical Officer. Salary £82 10s. per annum.

ROYAL FREE HOSPITAL, Gray's Inn-road, W.C.—Senior Resident Medical Officer. Salary £100 per annum, with board, residence, and washing.

ROYAL HOSPITAL FOR DISEASES OF THE CHEST, City-road, E.C.—Resident Medical Officer for six months. Salary at rate of £120 per annum, with board, lodging, and washing.

ROYAL NAVAL MEDICAL SERVICE.—Examination for 15 Commissions.

ST. MARYLEBONE GENERAL DISPENSARY, 77, Welbeck-street, W.—Honorary Physician.

SHEFFIELD EDUCATION COMMITTEE.—Assistant Medical Officer. Salary £250, rising to £300 per annum.

SHREWSBURY, SALOP INFIRMARY.—House Surgeon, unmarried. Salary £100 per annum, with board, washing, and residence.

SOUTHAMPTON FREE EYE HOSPITAL.—House Surgeon. Salary £100 per annum, with board and residence.

SOUTH SHIELDS EDUCATION AUTHORITY.—School Medical Officer. Salary £250 per annum.

STOKE-ON-TRENT, NORTH STAFFORDSHIRE INFIRMARY AND EYE HOSPITAL, Hartshill.—Senior House Surgeon. Salary £100 per annum, with apartments, board, and washing.

THROAT HOSPITAL, Golden-square, W.—Resident House Surgeon. Salary £75 per annum, with board, residence, and laundry. Also Honorary Dental Surgeon.

TYNEMOUTH COUNTY BOROUGH.—Medical Officer of Health. Salary £300 per annum, increasing to £400.

VENTNOR, ROYAL NATIONAL HOSPITAL FOR CONSUMPTION AND DISEASES OF THE CHEST ON THE SEPARATE PRINCIPLE.—Assistant Resident Medical Officer, unmarried. Salary £100 per annum, with board and lodging.

WARRINGTON INFIRMARY AND DISPENSARY.—Senior House Surgeon, unmarried. Salary £120 per annum, with residence and board.

WEST LONDON HOSPITAL, Hammersmith-road, W.—Pathologist. Salary £200 per annum.

YORK DISPENSARY.—Resident Medical Officer, unmarried. Salary £130 per annum, with board, lodging, and attendance.

THE Chief Inspector of Factories, Home Office, S.W., gives notice of vacancies as Certifying Surgeons under the Factory and Workshop Act at Duncannon, in the county of Wexford; at Staplehurst, in the county of Kent; at Portree, in the county of Inverness; at Callander, in the county of Perth; and at Taunton, in the county of Somerset.

Births, Marriages, and Deaths.

BIRTHS.

CHEYNEY.—On Feb. 17th, at The Priory, Caversham, Oxon., the wife of George H. Cheyney, M.R.C.S., L.R.C.P., of a daughter.

NUNNELEY.—On Feb. 19th, at Boreham House, Elstree, the wife of Frederick Pitcairn Nunneley, M.D. Oxon., of a daughter.

DEATHS.

HAMILTON.—On Feb. 19th, at Queen's-road, Aberdeen, David James Hamilton, M.B., LL.D., F.R.S., Emeritus Professor of Pathology in the University of Aberdeen.

ROUTH.—On Feb. 19th, at 52, Montagu-square, London, W., Charles Henry Felix Routh, M.D. Lond., M.R.C.P., aged 87.

Notes, Short Comments, and Answers to Correspondents.

PERSECUTION.

To the Editor of THE LANCET.

SIR,—Many members of the profession and the general public, friends of mine and utter strangers alike, have recently received a type-written document the last sentence of which runs: "I am happy to think that although I have come across many rascals in my time you are still an exceptional specimen of humanity in the experience of (sd.) H. Selfe Bennett." This was *written* six months ago to the defendant in a suit in which I gave evidence; it is now reproduced in type and sent broadcast, so that life has become a letter-writing misery to me (a German *confrère* furiously demanded an apology), although my friends kindly assumed "it had got into the wrong envelope." Will you allow me to explain in your columns that *I* am not insane and am not the sender of such undated and inconsequent letters, although they bear this address? Scotland Yard doubts if such conduct is any offence, and my solicitor says it will cost much money to trace the letters to the real sender.

I am, Sir, yours helplessly,

53, Upper Berkeley-street, W., Feb. 21st, 1909. H. SELFE BENNETT.

WANTED—SUGGESTIONS FOR TREATMENT.

To the Editor of THE LANCET.

SIR,—"Perplexed's" case reads like a typical case of periodic migraine. Have the eyes been examined for *small* errors of refraction *under full myoplegia*? If the patient is stout or even well nourished the following form of diet will probably succeed in preventing the recurrent attacks. Cease all sugar and articles of diet containing sugar, substituting saxin. Cut down the starch foods (bread, toast, &c.) to about three ounces per diem. Fats in strict moderation. The onus of nutrition is thus thrown mainly on the proteins and green non-starchy vegetables, both of which may be taken *ad lib.* There will be material loss of weight, but after one headache period is safely passed the starch intake may be cautiously raised until the weight remains just stationary. The change of diet should begin a fortnight before the expected attack. The patient's usual outdoor life should be continued. "Perplexed" will find several cases of a similar nature detailed in the appendix of "The Food Factor in Disease" (Longmans, Green and Co.), which he can obtain from any medical library.

I am, Sir, yours faithfully,

Feb. 20th, 1909. FRANCIS HARE.

To the Editor of THE LANCET.

SIR,—If "Perplexed" who wrote in this week's issue of THE LANCET cares to communicate direct with me I believe I can assist him with regard to his patient.

I am, Sir, yours faithfully,

61, Hoghton-street, Southport, Feb. 21st, 1909. A. A. BRADBURNE.

LEAD POISONING BY FERMENTED LIQUORS.

To the Editor of THE LANCET.

SIR,—The lead poisoning by wine mentioned on p. 508 of THE LANCET reminds me of what a cousin of mine told me some years ago. He was assistant to a medical man in Dorsetshire and came across several cases of lead poisoning. The district was rural and the only common factor was the cider drunk habitually by the people. This cider was (and probably still is) stored in large earthenware jars. The lead in the glaze, dissolved by the malic acid, was the cause of the poisoning, but, of course, he found it impossible to convince the victims of this.

I am, Sir, yours faithfully,

Feb. 15th, 1909. T. C. D.

DRUGS AND MEDICAL REQUISITES.

Messrs. Evans, Gadd, and Co., of Bristol and Exeter, have forwarded to us a catalogue of drugs and medical requisites. The catalogue is something more than the ordinary trade catalogue, for it contains certain information about many of the innumerable new drugs which are more or less in use and gives their proper titles opposite the "trade name" of each one. It would be interesting to know upon what grounds these trade names are formed. Why, for instance, should calcii naphthol-sulphonas be called Abrastol? We were told the other day that the origin of the name "hemisine," which, we may add, is adrenin, was hemi = blood and sine = without! This derivation, if not sound philologically, is at least reasonable. The catalogue will be sent, post free, to any medical man who chooses to apply for one.

Asmodeus.—It is quite usual for coroners to grant certificates of death and to hold inquests without calling any medical evidence. Section 21 of the Coroners Act, 1887, leaves it at the coroner's discretion whether he shall or shall not summon a medical witness. With regard to the question of fees, if A and B were not duly summoned by the coroner to give evidence they have no right to a fee.

COMMUNICATIONS not noticed in our present issue will receive attention in our next.

Medical Diary for the ensuing Week.

SOCIETIES.

ROYAL SOCIETY OF MEDICINE, 20, Hanover-square, W.

TUESDAY.

THERAPEUTICAL AND PHARMACOLOGICAL SECTION (Hon. Secretaries—J. Gray Duncanson, H. Charles Cameron): at 4.30 P.M.

Discussion:
On the Treatment of Spasmodic Asthma (opened by Dr. Cecil Wall).

PATHOLOGICAL SECTION (Hon. Secretaries—Leonard S. Dudgeon, O. Grünbaum) at the Laboratories, St. Bartholomew's Hospital: at 8.30 P.M.

FRIDAY.

LARYNGOLOGICAL SECTION (Hon. Secretaries—George C. Cathcart, Atwood Thorne): at 5 P.M.

Cases, Specimens, &c.:
Dr. Lambert Lack: Telangiectasis with Epistaxis.
Mr. W. Stuart-Low: (1) Thyroid Tumour of the Tongue; (2) Case showing an Unusually Large and Long Tongue.
Dr. Donelan: (1) Uvula with Growth on Left Side; (2) Right and Left Rectangular Chisels for Removing Nasal Wall of Maxillary Antrum.

SECTION OF ANÆSTHETICS (Hon. Secretaries—Llewelyn Powell' R. W. Collum): at 8.30 P.M.

Discussion:
On the Treatment of Shock during Anæsthesia (opened by Dr. Dudley Buxton).

SATURDAY.

OTOLOGICAL SECTION (Hon. Secretaries—W. H. Kelson, Hunter F. Tod): at 10 A.M.

Paper:
Mr. Sydney Scott: A Contribution to the Problem of Vertigo. Cases and Specimens illustrating the subject of Vertigo can be shown at this meeting.

N.B.—Fellows of the Society are entitled to attend and to speak at all Meetings.

MEDICAL SOCIETY OF LONDON, 11, Chandos-street, Cavendish-square, W.

MONDAY.—9 P.M., Dr. S. Martin: On Some Functional Disorders of the Stomach and Intestines: their Diagnosis from Organic Disease and Treatment (Lettsomian Lecture).

ROYAL SOCIETY OF ARTS, John-street, Adelphi, W.C.

MONDAY.—8 P.M., Mr. L. Gaster: Methods of Artificial Illumination. (Cantor Lecture.)

CHILD STUDY SOCIETY LONDON, Parkes Museum, Margaret-street, W.

TUESDAY.—7.15 P.M., Annual General Meeting. 8 P.M., Prof. J. Adams: Mental Development of Children.

NORTH-EAST LONDON CLINICAL SOCIETY, Prince of Wales's Hospital, Tottenham, N.

THURSDAY.—4.15 P.M., Clinical Cases.

HARVEIAN SOCIETY OF LONDON, Stafford Rooms, Titchborne-street, Edgware-road, W.

THURSDAY.—8.30 P.M., Discussion on the Early Diagnosis and Treatment of Cancer of the Stomach (opened by Dr. W. H. White and Mr. B. G. A. Moynihan).

RÖNTGEN SOCIETY, 20, Hanover-square, W.

THURSDAY.—8.15 P.M., Mr. A. A. C. Swinton: Some Vacuum Tube Phenomena.

WEST LONDON MEDICO-CHIRURGICAL SOCIETY, West London Hospital, Hammersmith-road, W.

FRIDAY.—Dr. E. F. Potter: The Submucous Resection Operation for the Removal of Deviations and Obstructive Deformities of the Nasal Septum (illustrated by lantern slides).

LECTURES, ADDRESSES, DEMONSTRATIONS, &c.

ROYAL COLLEGE OF SURGEONS OF ENGLAND, Lincoln's Inn Fields, W.C.

MONDAY, WEDNESDAY, AND FRIDAY.—5 P.M., Prof. A. Keith: The Mechanism of Respiration in Man. (Hunterian Lectures.)

ROYAL COLLEGE OF PHYSICIANS OF LONDON, Pall Mall East.

TUESDAY AND THURSDAY.—5 P.M., Dr. R. T. Hewlett: Disinfection and Disinfectants. (Milroy Lectures.)

POST-GRADUATE COLLEGE, West London Hospital, Hammersmith-road, W.

MONDAY.—10 A.M., Lecture:—Surgical Registrar: Demonstration of Cases in Wards. 12 noon, Lecture:—Dr. Low: Pathological Demonstration. 2 P.M., Medical and Surgical Clinics. X Rays. Mr Dunn: Diseases of the Eyes. 2.30 P.M., Operations. 5 P.M., Lecture:—Mr. Dunn: Cases of Eye Diseases.

TUESDAY.—10 A.M., Dr. Moullin: Gynæcological Operations 2 P.M., Medical and Surgical Clinics. X Rays. Dr. Davis Diseases of the Throat, Nose, and Ear. 2.30 P.M., Operations Dr Abraham: Diseases of the Skin. 5 P.M., Lecture:—Dr. Pritchard: Clinical Pathology.

WEDNESDAY.—10 A.M., Dr. Davis: Diseases of the Throat, Nose, and Ear. Dr. Saunders: Diseases of Children. 12.15 P.M., Lecture:—Dr. Pritchard: Practical Medicine. 2 P.M., Medical and Surgical Clinics. X Rays. Mr. Harman: Diseases of the Eyes. 2.30 P.M., Operations. Dr. Robinson: Diseases of Women. 5 P.M., Lecture:—Dr. Beddard: Medicine.

THURSDAY.—10 A.M., Lecture:—Surgical Registrar: Demonstration of Cases in Wards. 2 P.M., Medical and Surgical Clinics. X Rays. Mr. Dunn: Diseases of the Eyes. 2.30 P.M., Operations. 5 P.M., Lecture:—Mr. Edwards: Clinical.

FRIDAY.—10 A.M., Dr. Moullin: Gynæcological Operations. Lecture:—Medical Registrar: Demonstration of Cases in Wards. 2 P.M., Medical and Surgical Clinics. X Rays. Dr. Davis: Diseases of the Throat, Nose, and Ear. 2.30 P.M., Operations. Dr. Abraham: Diseases of the Skin. 5 P.M., Lecture:—Mr. Etherington-Smith: Clinical.

SATURDAY.—10 A.M., Dr. Davis: Diseases of the Throat, Nose, and Ear. Dr. Saunders: Diseases of Children. 12.15 P.M., Lecture:—Dr. Pritchard: Practical Medicine. 2 P.M., Medical and Surgical Clinics. X Rays. Mr. Harman: Diseases of the Eyes. 2.30 P.M., Operations. Dr. Robinson: Diseases of Women.

NORTH-EAST LONDON POST-GRADUATE COLLEGE, Prince of Wales's General Hospital, Tottenham, N.

MONDAY.—Clinics:—10 A.M., Surgical Out-patient (Mr. H. Evans). 2.30 P.M., Medical Out-patient (Dr. T. R. Whipham); Nose, Throat, and Ear (Mr. H. W. Carson); X Rays. 4.30 P.M., Medical In-patient (Dr. A. J. Whiting).

TUESDAY.—Clinic: 10 A.M., Medical Out-patient (Dr. A. G. Auld). 2.30 P.M., Operations (Mr. Carson). Clinics:—Surgical Out-patient (Mr. W. Edmunds); Gynæcological (Dr. A. E. Giles).

WEDNESDAY.—Clinics:—2.30 P.M., Medical Out-patient (Dr. T. R. Whipham); Skin (Dr. G. N. Meachen); Eye (Mr. R. P. Brooks).

THURSDAY.—2.30 P.M., Gynæcological Operations (Dr. A. E. Giles). Clinics:—Medical Out-patient (Dr. A. J. Whiting); Surgical (Mr. H. W. Carson); X Rays. 3 P.M., Medical In-patient (Dr. G. P. Chappel).

FRIDAY.—10 A.M., Clinic:—Surgical Out-patient (Mr. H. Evans). 2.30 P.M., Operations (Mr. W. Edmunds). Clinics:—Medical Out-patient (Dr. A. G. Auld); Eye (Mr. R. P. Brooks). 3 P.M., Medical In-patient (Dr. R. M. Leslie). 4.30 P.M., Lecture:—Mr. R. P. Brooks: Types of Keratitis, their Diagnosis and Treatment.

LONDON SCHOOL OF CLINICAL MEDICINE, Dreadnought Hospital, Greenwich.

MONDAY.—2 P.M., Operations. 2.15 P.M., Sir Dyce Duckworth: Medicine. 3.15 P.M., Mr. Turner: Surgery. 4 P.M., Mr. Lawrence: Ear and Throat. Out-patient Demonstrations:—10 A.M., Surgical and Medical. 12 noon, Ear and Throat.

TUESDAY.—2 P.M., Operations. 2.15 P.M., Dr. R. Wells: Medicine. 3.15 P.M., Mr. Carless: Surgery. 4 P.M., Sir M. Morris: Diseases of the Skin. Out-patient Demonstrations:—10 A.M., Surgical and Medical. 12 noon, Skin. 3.15 P.M., Special Lecture:—Mr. Carless: Fracture of the Patella.

WEDNESDAY.—2 P.M., Operations. 2.15 P.M., Dr. F. Taylor: Medicine. 3.30 P.M., Mr. Cargill: Ophthalmology. Out-patient Demonstrations:—10 A.M., Surgical and Medical. 11 A.M., Eye. 2.15 P.M., Special Lecture:—Dr. F. Taylor: Peripheral Neuritis.

THURSDAY.—2 P.M., Operations. 2.15 P.M., Dr. G. Rankin: Medicine. 3.15 P.M., Sir W. Bennett: Surgery. 4 P.M., Dr. Sale-Barker: Radiography. Out-patient Demonstrations:—10 A.M., Surgical and Medical. 12 noon, Ear and Throat.

FRIDAY.—2 P.M., Operations. 2.15 P.M., Dr. R. Bradford: Medicine. 3.15 P.M., Mr. McGavin: Surgery. Out-patient Demonstrations:—10 A.M., Surgical and Medical. 12 noon, Skin. 2.15 P.M., Special Lecture:—Dr. R. Bradford: Uræmia.

SATURDAY.—2 P.M., Operations. Out-patient Demonstrations:—10 A.M., Surgical and Medical. 11 A.M., Eye.

WEST-END HOSPITAL FOR DISEASES OF THE NERVOUS SYSTEM, 73, Welbeck-street, W.

MONDAY.—3 P.M., Clinical Demonstration: Dr. H. Campbell.
TUESDAY.—5 P.M., Clinical Demonstration: Dr. P. Stewart.
WEDNESDAY.—3 P.M. Clinical Demonstration: Dr. F. Palmer.
THURSDAY.—3 P.M., Clinical Demonstration: Dr. T. D. Savill.
FRIDAY.—5 P.M., Clinical Demonstration: Dr. E. Macnamara.

ST. JOHN'S HOSPITAL FOR DISEASES OF THE SKIN, Leicester-square, W.C.

THURSDAY.—6 P.M., Chesterfield Lecture:—Fungous Diseases of the Skin: I., Tinea Circinata; II., Tinea Imbricata; III., Tinea Versicolor; IV., Erythrasma; V., Actinomycosis; VI., Madura Foot.

NATIONAL HOSPITAL FOR THE PARALYSED AND EPILEPTIC Queen-square, Bloomsbury, W.C.

TUESDAY.—3.30 P.M., Clinical Lecture:—Dr. Collier: Disorders the Nervous System in Renal Disease.
FRIDAY.—3.30 P.M., Clinical Lecture:—Dr. Ormerod: Hysteria.

CENTRAL LONDON THROAT AND EAR HOSPITAL, Gray's In road, W.C.

TUESDAY AND FRIDAY.—3.45 P.M., Lecture:—Mr. Stuart-Low Accessory Sinuses.

NATIONAL LEAGUE FOR PHYSICAL EDUCATION AND IMPROVEMENT, 56, Queen's Gate, S.W.

THURSDAY.—3.30 P.M., Dr. F. E. Fremantle: The Medical Inspection of School Children.

OPERATIONS.

METROPOLITAN HOSPITALS.

MONDAY (1st).—London (2 P.M.), St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), St. George's (2 P.M.), St. Mary's (2.30 P.M.), Middlesex (1.30 P.M.), Westminster (2 P.M.), Chelsea (2 P.M.), Samaritan (Gynæcological, by Physicians, 2 P.M.), Soho-square (2 P.M.), City Orthopædic (4 P.M.), Gt. Northern Central (2.30 P.M.), West London (2.30 P.M.), London Throat (9.30 A.M.), Royal Free (2 P.M.), Guy's (1.30 P.M.), Children, Gt. Ormond-street (9 A.M.), St. Mark's (2.30 P.M.).

TUESDAY (2nd).—London (2 P.M.), St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), Guy's (1.30 P.M.), Middlesex (1.30 P.M.), Westminster (2 P.M.), West London (2.30 P.M.), University College (2 P.M.), St. George's (1 P.M.), St. Mary's (1 P.M.), St. Mark's (2.30 P.M.), Cancer (2 P.M.), Metropolitan (2.30 P.M.), London Throat (9.30 A.M.), Samaritan (9.30 A.M. and 2.30 P.M.), Throat, Golden-square (9.30 A.M.), Soho-square (2 P.M.), Chelsea (2 P.M.), Central London Throat and Ear (2 P.M.), Children, Gt. Ormond-street (9 A.M. and 2 P.M., Ophthalmic, 2 P.M.), Tottenham (2.30 P.M.), Central London Throat and Ear (Minor, 9 A.M., Major, 2 P.M.).

WEDNESDAY (3rd).—St. Bartholomew's (1.30 P.M.), University College (2 P.M.), Royal Free (2 P.M.), Middlesex (1.30 P.M.), Charing Cross (3 P.M.), St. Thomas's (2 P.M.), London (2 P.M.), King's College (2 P.M.), St. George's (Ophthalmic, 1 P.M.), St. Mary's (2 P.M.), National Orthopædic (10 A.M.), St. Peter's (2 P.M.), Samaritan (9.30 A.M. and 2.30 P.M.), Gt. Northern Central (2.30 P.M.), Westminster (2 P.M.), Metropolitan (2.30 P.M.), London Throat (9.30 A.M.), Cancer (2 P.M.), Throat, Golden-square (9.30 A.M.), Guy's (1.30 P.M.), Royal Ear (2 P.M.), Royal Orthopædic (3 P.M.), Children, Gt. Ormond-street (9 A.M. and 9.30 A.M., Dental, 2 P.M.), Tottenham (Ophthalmic, 2.30 P.M.), West London (2.30 P.M.), Central London Throat and Ear (Minor, 9 A.M., Major, 2 P.M.).

THURSDAY (4th).—St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), University College (2 P.M.), Charing Cross (3 P.M.), St. George's (1 P.M.), London (2 P.M.), King's College (2 P.M.), Middlesex (1.30 P.M.), St. Mary's (2.30 P.M.), Soho-square (2 P.M.), North-West London (2 P.M.), Gt. Northern Central (Gynæcological, 2.30 P.M.), Metropolitan (2.30 P.M.), London Throat (9.30 A.M.), Samaritan (9.30 A.M and 2.30 P.M.), Throat, Golden-square (9.30 A.M.), Guy's (1.30 P.M.), Royal Orthopædic (9 A.M.), Royal Ear (2 P.M.), Children, Gt. Ormond-street (9 A.M. and 2 P.M.), Tottenham (Gynæcological, 2.30 P.M.), West London (2.30 P.M), Central London Throat and Ear (Minor, 9 A.M., Major, 2 P.M.).

FRIDAY (5th).—London (2 P.M.), St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), Guy's (1.30 P.M.), Middlesex (1.30 P.M.), Charing Cross (3 P.M.), St. George's (1 P.M.), King's College (2 P.M.), St. Mary's (2 P.M.), Ophthalmic (10 A.M.), Cancer (2 P.M.), Chelsea (2 P.M.), Gt. Northern Central (2.30 P.M.), West London (2.30 P.M.), London Throat (9.30 A.M.), Samaritan (9.30 A.M. and 2.30 P.M.), Throat, Golden-square (9.30 A.M.), City Orthopædic (2.30 P.M.), Soho-square (2 P.M.), Children, Gt. Ormond-street (9 A.M., Aural, 2 P.M.), Tottenham (2.30 P.M.), St. Peter's (2 P.M.)., Central London Throat and Ear (Minor, 9 A.M., Major, 2 P.M.).

SATURDAY (6th).—Royal Free (9 A.M.), London (2 P.M.), Middlesex (1.30 P.M.), St. Thomas's (2 P.M.), University College (9.15 A.M.), Charing Cross (2 P.M.), St. George's (1 P.M.), St. Mary's (10 A.M.), Throat, Golden-square (9.30 A.M.), Guy's (1.30 P.M.), Children, Gt. Ormond-street (9 A.M. and 9.30 A.M.), West London (2.30 P.M.).

At the Royal Eye Hospital (2 P.M.), the Royal London Ophthalmic (10 A.M.), the Royal Westminster Ophthalmic (1.30 P.M.), and the Central London Ophthalmic Hospital operations are performed daily.

EDITORIAL NOTICES.

IT is most important that communications relating to the Editorial business of THE LANCET should be addressed *exclusively* "TO THE EDITOR," and not in any case to any gentleman who may be supposed to be connected with the Editorial staff. It is urgently necessary that attention should be given to this notice.

It is especially requested that early intelligence of local events having a medical interest, or which it is desirable to bring under the notice of the profession, may be sent direct to this office.

Lectures, original articles, and reports should be written on one side of the paper only, AND WHEN ACCOMPANIED BY BLOCKS IT IS REQUESTED THAT THE NAME OF THE AUTHOR, AND IF POSSIBLE OF THE ARTICLE, SHOULD BE WRITTEN ON THE BLOCKS TO FACILITATE IDENTIFICATION.

Letters, whether intended for insertion or for private information, must be authenticated by the names and addresses of their writers—not necessarily for publication.

We cannot prescribe or recommend practitioners.

Local papers containing reports or news paragraphs should be marked and addressed "To the Sub-Editor."

Letters relating to the publication, sale and advertising departments of THE LANCET *should be addressed "To the Manager."*

We cannot undertake to return MSS. not used.

MANAGER'S NOTICES.

THE INDEX TO THE LANCET.

The Index and Title-page to Vol. II. of 1908, which was completed with the issue of Dec. 26th, were given in THE LANCET of Jan. 2nd, 1909.

VOLUMES AND CASES.

VOLUMES for the second half of the year 1908 are now ready. Bound in cloth, gilt lettered, price 18*s.*, carriage extra.

Cases for binding the half-year's numbers are also ready. Cloth, gilt lettered, price 2*s.*, by post 2*s.* 3*d.*

To be obtained on application to the Manager, accompanied by remittance.

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SUBSCRIBERS ABROAD ARE PARTICULARLY REQUESTED TO NOTE THE RATES OF SUBSCRIPTIONS GIVEN ABOVE. It has come to the knowledge of the Manager that in some cases higher rates are being charged, on the plea that the heavy weight of THE LANCET necessitates additional postage above the ordinary rate allowed for in the terms of subscriptions. Any demand for increased rates, on this or on any other ground, should be resisted. The Proprietors of THE LANCET have for many years paid, and continue to pay, the whole of the heavy cost of postage on overweight foreign issues; and Agents are authorised to collect, and generally do so collect, from the Proprietors the cost of such extra postage.

The Manager will be pleased to forward copies direct from the Offices to places abroad at the above rates, whatever be the weight of any of the copies so supplied. Address—THE MANAGER, THE LANCET OFFICES, 423, STRAND, LONDON, ENGLAND.

METEOROLOGICAL READINGS.

(Taken daily at 8.30 a.m. by Steward's Instruments.)

THE LANCET Office, Feb. 25th, 1909.

Date.	Barometer reduced to Sea Level and 32° F.	Direction of Wind.	Rainfall.	Solar Radio in Vacuo.	Maximum Temp. Shade.	Min. Temp.	Wet Bulb.	Dry Bulb.	Remarks.
Feb. 19	30·14	N.E.	...	70	47	33	33	34	Fine
,, 20	30·37	S.E.	...	85	49	34	33	35	Fine
,, 21	30·44	N.E.	...	87	52	33	32	33	Fine
,, 22	30·52	S.E.	...	73	46	32	32	33	Foggy
,, 23	30·39	S.W.	...	53	49	28	...	30	Foggy
,, 24	30·33	N.E.	...	73	41	30	31	32	Overcast
,, 25	30·31	N.	...	40	37	31	33	36	Overcast

During the week marked copies of the following newspapers have been received:—*Lynn Advertiser, Lynn News and County Press, Evening Standard and St. James's Gazette, Yarmouth Independent, Literary Digest, Yeovil Gazette, Oldham Standard, Durham Advertiser, Richmond Times, Car if Daily Mail, Birmingham Mail, Notts Guardian, Bradford Observer, Wimbledon Gazette, Wimbledon Boro' News, Westminster Gazett Morning Leader, &c.*

Medical Diary for the ensuing Week.

SOCIETIES.

ROYAL SOCIETY OF MEDICINE, 20, Hanover-square, W.

TUESDAY.

THERAPEUTICAL AND PHARMACOLOGICAL SECTION (Hon. Secretaries—J. Gray Duncanson, H. Charles Cameron): at 4.30 P.M.

Discussion:
On the Treatment of Spasmodic Asthma (opened by Dr. Cecil Wall).

PATHOLOGICAL SECTION (Hon. Secretaries—Leonard S. Dudgeon, O. Grünbaum) at the Laboratories, St. Bartholomew's Hospital: at 8.30 P.M.

FRIDAY.

LARYNGOLOGICAL SECTION (Hon. Secretaries—George C. Cathcart, Atwood Thorne): at 5 P.M.

Cases, Specimens, &c.:
Dr. Lambert Lack: Telangiectasis with Epistaxis.
Mr. W. Stuart-Low: (1) Thyroid Tumour of the Tongue; (2) Case showing an Unusually Large and Long Tongue.
Dr. Donelan: (1) Uvula with Growth on Left Side; (2) Right and Left Rectangular Chisels for Removing Nasal Wall of Maxillary Antrum.

SECTION OF ANÆSTHETICS (Hon. Secretaries—Llewelyn Powell' R. W. Collum): at 8.30 P.M.

Discussion:
On the Treatment of Shock during Anæsthesia (opened by Dr. Dudley Buxton).

SATURDAY.

OTOLOGICAL SECTION (Hon. Secretaries—W. H. Kelson, Hunter F. Tod): at 10 A.M.

Paper:
Mr. Sydney Scott: A Contribution to the Problem of Vertigo. Cases and Specimens illustrating the subject of Vertigo can be shown at this meeting.

N.B.—Fellows of the Society are entitled to attend and to speak at all Meetings.

MEDICAL SOCIETY OF LONDON, 11, Chandos-street, Cavendish-square, W.

MONDAY.—9 P.M., Dr. S. Martin: On Some Functional Disorders of the Stomach and Intestines: their Diagnosis from Organic Disease and Treatment (Lettsomian Lecture).

ROYAL SOCIETY OF ARTS, John-street, Adelphi, W.C.

MONDAY.—8 P.M., Mr. L. Gaster: Methods of Artificial Illumination. (Cantor Lecture.)

CHILD STUDY SOCIETY LONDON, Parkes Museum, Margaret-street, W.

TUESDAY.—7.15 P.M., Annual General Meeting. 8 P.M., Prof. J. Adams: Mental Development of Children.

NORTH-EAST LONDON CLINICAL SOCIETY, Prince of Wales's Hospital, Tottenham, N.

THURSDAY.—4.15 P.M., Clinical Cases.

HARVEIAN SOCIETY OF LONDON, Stafford Rooms, Titchborne-street, Edgware-road, W.

THURSDAY.—8.30 P.M., Discussion on the Early Diagnosis and Treatment of Cancer of the Stomach (opened by Dr. W. H. White and Mr. B. G. A. Moynihan).

RÖNTGEN SOCIETY, 20, Hanover-square, W.

THURSDAY.—8.15 P.M., Mr. A. A. C. Swinton: Some Vacuum Tube Phenomena.

WEST LONDON MEDICO-CHIRURGICAL SOCIETY, West London Hospital, Hammersmith-road, W.

FRIDAY.—Dr. E. F. Potter: The Submucous Resection Operation for the Removal of Deviations and Obstructive Deformities of the Nasal Septum (illustrated by lantern slides).

LECTURES, ADDRESSES, DEMONSTRATIONS, &c.

ROYAL COLLEGE OF SURGEONS OF ENGLAND, Lincoln's Inn Fields, W.C.

MONDAY, WEDNESDAY, AND FRIDAY.—5 P.M., Prof. A. Keith: The Mechanism of Respiration in Man. (Hunterian Lectures.)

ROYAL COLLEGE OF PHYSICIANS OF LONDON, Pall Mall East.

TUESDAY AND THURSDAY.—5 P.M., Dr. R. T. Hewlett: Disinfection and Disinfectants. (Milroy Lectures.)

POST-GRADUATE COLLEGE, West London Hospital, Hammersmith-road, W.

MONDAY.—10 A.M., Lecture:—Surgical Registrar: Demonstration of Cases in Wards. 12 noon, Lecture:—Dr. Low: Pathological Demonstration. 2 P.M., Medical and Surgical Clinics. X Rays. Mr Dunn: Diseases of the Eyes. 2.30 P.M., Operations. 5 P.M., Lecture:—Mr. Dunn: Cases of Eye Diseases.

TUESDAY.—10 A.M., Dr. Moullin: Gynæcological Operations 2 P.M., Medical and Surgical Clinics. X Rays. Dr. Davis: Diseases of the Throat, Nose, and Ear. 2.30 P.M., Operations Dr Abraham: Diseases of the Skin. 5 P.M., Lecture:—Dr. Pritchard: Clinical Pathology.

WEDNESDAY.—10 A.M., Dr. Davis: Diseases of the Throat, Nose, and Ear. Dr. Saunders: Diseases of Children. 12.15 P.M., Lecture:—Dr. Pritchard: Practical Medicine. 2 P.M., Medical and Surgical Clinics. X Rays. Mr. Harman: Diseases of the Eyes. 2.30 P.M., Operations. Dr. Robinson: Diseases of Women. 5 P.M., Lecture:—Dr. Beddard: Medicine.

THURSDAY.—10 A.M., Lecture:—Surgical Registrar: Demonstration of Cases in Wards. 2 P.M., Medical and Surgical Clinics. X Rays. Mr. Dunn: Diseases of the Eyes. 2.30 P.M., Operations. 5 P.M., Lecture:—Mr. Edwards: Clinical.

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SATURDAY.—10 A.M., Dr. Davis: Diseases of the Throat, Nose, and Ear. Dr. Saunders: Diseases of Children. 12.15 P.M., Lecture:—Dr. Pritchard: Practical Medicine. 2 P.M., Medical and Surgical Clinics. X Rays. Mr. Harman: Diseases of the Eyes. 2.30 P.M., Operations. Dr. Robinson: Diseases of Women.

NORTH-EAST LONDON POST-GRADUATE COLLEGE, Prince of Wales's General Hospital, Tottenham, N.

MONDAY.—Clinics:—10 A.M., Surgical Out-patient (Mr. H. Evans). 2.30 P.M., Medical Out-patient (Dr. T. R. Whipham); Nose. Throat, and Ear (Mr. H. W. Carson); X Rays. 4.30 P.M., Medical In-patient (Dr. A. J. Whiting).

TUESDAY.—Clinic: 10 A.M., Medical Out-patient (Dr. A. G. Auld). 2.30 P.M., Operations (Mr. Carson). Clinics:—Surgical Out-patient (Mr. W. Edmunds); Gynæcological (Dr. A. E. Giles).

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LONDON SCHOOL OF CLINICAL MEDICINE, Dreadnought Hospital, Greenwich.

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SATURDAY.—2 P.M., Operations. Out-patient Demonstrations:—10 A.M., Surgical and Medical. 11 A.M., Eye.

WEST-END HOSPITAL FOR DISEASES OF THE NERVOUS SYSTEM, 73, Welbeck-street, W.

MONDAY.—3 P.M., Clinical Demonstration: Dr. H. Campbell.
TUESDAY.—5 P.M., Clinical Demonstration: Dr. P. Stewart.
WEDNESDAY.—3 P.M. Clinical Demonstration: Dr. F. Palmer.
THURSDAY.—3 P.M., Clinical Demonstration: Dr. T. D. Savill.
FRIDAY.—5 P.M., Clinical Demonstration: Dr. E. Macnamara.

ST. JOHN'S HOSPITAL FOR DISEASES OF THE SKIN, Leicester-square, W.C.

THURSDAY.—6 P.M., Chesterfield Lecture:—Fungous Diseases of the Skin: I., Tinea Circinata; II., Tinea Imbricata; III., Tinea Versicolor; IV., Erythrasma; V., Actinomycosis; VI., Madura Foot.

NATIONAL HOSPITAL FOR THE PARALYSED AND EPILEPTIC Queen-square, Bloomsbury, W.C.

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CENTRAL LONDON THROAT AND EAR HOSPITAL, Gray's In road, W.C.

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NATIONAL LEAGUE FOR PHYSICAL EDUCATION AND IMPROVEMENT, 56, Queen's Gate, S.W.

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MONDAY (1st).—London (2 P.M.), St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), St. George's (2 P.M.), St. Mary's (2.30 P.M.), Middlesex (1.30 P.M.), Westminster (2 P.M.), Chelsea (2 P.M.), Samaritan (Gynæcological, by Physicians, 2 P.M.), Soho-square (2 P.M.), City Orthopædic (4 P.M.), Gt. Northern Central (2.30 P.M.), West London (2.30 P.M.), London Throat (9.30 A.M.), Royal Free (2 P.M.), Guy's (1.30 P.M.), Children, Gt. Ormond-street (9 A.M.), St. Mark's (2.30 P.M.).

TUESDAY (2nd).—London (2 P.M.), St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), Guy's (1.30 P.M.), Middlesex (1.30 P.M.), Westminster (2 P.M.), West London (2.30 P.M.), University College (2 P.M.), St. George's (1 P.M.), St. Mary's (1 P.M.), St. Mark's (2.30 P.M.), Cancer (2 P.M.), Metropolitan (2.30 P.M.), London Throat (9.30 A.M.), Samaritan (9.30 A.M. and 2.30 P.M.), Throat, Golden-square (9.30 A.M.), Soho-square (2 P.M.), Chelsea (2 P.M.), Central London Throat and Ear (2 P.M.), Children, Gt. Ormond-street (9 A.M. and 2 P.M., Ophthalmic, 2 P.M.), Tottenham (2.30 P.M.), Central London Throat and Ear (Minor, 9 A.M., Major, 2 P.M.).

WEDNESDAY (3rd).—St. Bartholomew's (1.30 P.M.), University College (2 P.M.), Royal Free (2 P.M.), Middlesex (1.30 P.M.), Charing Cross (3 P.M.), St. Thomas's (2 P.M.), London (2 P.M.), King's College (2 P.M.), St. George's (Ophthalmic, 1 P.M.), St. Mary's (2 P.M.), National Orthopædic (10 A.M.), St. Peter's (2 P.M.), Samaritan (9.30 A.M. and 2.30 P.M.), Gt. Northern Central (2.30 P.M.), Westminster (2 P.M.), Metropolitan (2.30 P.M.), London Throat (9.30 A.M.), Cancer (2 P.M.), Throat, Golden-square (9.30 A.M.), Guy's (1.30 P.M.), Royal Ear (2 P.M.), Royal Orthopædic (3 P.M.), Children, Gt. Ormond-street (9 A.M. and 9.30 A.M., Dental, 2 P.M.), Tottenham (Ophthalmic, 2.30 P.M.), West London (2.30 P.M.), Central London Throat and Ear (Minor, 9 A.M., Major, 2 P.M.).

THURSDAY (4th).—St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), University College (2 P.M.), Charing Cross (3 P.M.), St. George's (1 P.M.), London (2 P.M.), King's College (2 P.M.), Middlesex (1.30 P.M.), St. Mary's (2.30 P.M.), Soho-square (2 P.M.), North-West London (2 P.M.), Gt. Northern Central (Gynæcological, 2.30 P.M.), Metropolitan (2.30 P.M.), London Throat (9.30 A.M.), Samaritan (9.30 A.M and 2.30 P.M.), Throat, Golden-square (9.30 A.M.), Guy's (1.30 P.M.), Royal Orthopædic (9 A.M.), Royal Ear (2 P.M.), Children, Gt. Ormond-street (9 A.M. and 2 P.M.), Tottenham (Gynæcological, 2.30 P.M.), West London (2.30 P.M), Central London Throat and Ear (Minor, 9 A.M., Major, 2 P.M.).

FRIDAY (5th).—London (2 P.M.), St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), Guy's (1.30 P.M.), Middlesex (1.30 P.M.), Charing Cross (3 P.M.), St. George's (1 P.M.), King's College (2 P.M.), St. Mary's (2 P.M.), Ophthalmic (10 A.M.), Cancer (2 P.M.), Chelsea (2 P.M.), Gt. Northern Central (2.30 P.M.), West London (2.30 P.M.), London Throat (9.30 A.M.), Samaritan (9.30 A.M. and 2.30 P.M.), Throat, Golden-square (9.30 A.M.), Soho-square (2 P.M.), Children, Gt. Ormond-street (9 A.M., Aural, 2 P.M.), Tottenham (2.30 P.M.), St. Peter's (2 P.M.)., Central London Throat and Ear (Minor, 9 A.M., Major, 2 P.M.).

SATURDAY (6th).—Royal Free (9 A.M.), London (2 P.M.), Middlesex (1.30 P.M.), St. Thomas's (2 P.M.), University College (9.15 A.M.), Charing Cross (2 P.M.), St. George's (1 P.M.), St. Mary's (10 A.M.), Throat, Golden-square (9.30 A.M.), Guy's (1.30 P.M.), Children, Gt. Ormond-street (9 A.M. and 9.30 A.M.), West London (2.30 P.M.).

At the Royal Eye Hospital (2 P.M.), the Royal London Ophthalmic (10 A.M.), the Royal Westminster Ophthalmic (1.30 P.M.), and the Central London Ophthalmic Hospital operations are performed daily.

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THE INDEX TO THE LANCET.

The Index and Title-page to Vol. II. of 1908, which was completed with the issue of Dec. 26th, were given in THE LANCET of Jan. 2nd, 1909.

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(Taken daily at 8.30 a.m. by Steward's Instruments.)

THE LANCET Office, Feb. 25th, 1909.

Date.	Barometer reduced to Sea Level and 32° F.	Direction of Wind.	Rainfall.	Solar Radio in Vacuo.	Maximum Temp. Shade.	Min. Temp.	Wet Bulb.	Dry Bulb.	Remarks.
Feb. 19	30·14	N.E.	...	70	47	33.	33	34	Fine
,, 20	30 37	S.E.	...	85	49	34	33	35	Fine
,, 21	30·44	N.E.	...	87	52	33	32	33	Fine
,, 22	30·52	S.E.	...	73	46	32	32	33	Foggy
,, 23	30·39	S.W.	...	53	49	28	...	30	Foggy
,, 24	30·33	N.E.	...	73	41	30	31	32	Overcast
,, 25	30·31	N.	...	40	37	31	33	36	Overcast

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